

ANGLIA RUSKIN UNIVERSITY

ANGLIA LAW SCHOOL

DOCTOR OF PHILOSOPHY

**The EU Renewable Electricity Regulatory
Framework and Its Legal Conflicts With Free
Trade Principles**

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A Thesis in partial fulfilment of the
requirements of Anglia Ruskin University
for the degree of Doctor of Philosophy

Submitted: 31 October 2018

FACULTY OF BUSINESS & LAW

ACKNOWLEDGEMENTS

I would like to offer my profound thanks to my supervisors Dr Egle Dagilyte and Dr Aldo Zammit Borda who oversaw this research and guided it to a successful completion.

In addition, I would like to thank Dr Aldo Zammit Borda for suggesting the theoretical framework of Directive type (command and control/market and shared competence or EU exclusive competence) used throughout this work.

This research benefited from various professional and academic experiences for which thanks are due to friends, colleagues and mentors all assisting and contributing to this research in their own special way but are too numerous to mention.

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ABSTRACT

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This research considers the EU's 21st century objective of mitigating climate change by promoting renewable electricity and the multiple legal conflicts between this objective and EU's core legal principles of free movement, the prohibition of distortion of competition and other forms of state aid.

This research fills a gap in academic literature by analysing the EU renewables regulatory framework. The research finds renewable electricity is accorded a 'special' status, allowing export restrictions, price enhancements, priority market access, tax exemptions and payment guarantees. This 'special' status is analysed via case law and empirical research data.

The case law analysis confirms a *lex specialis* approach by the CJEU. This is considered problematic from a legal consistency point of view, as it leads to unclear investment signals and short-termism in an industry with long-term investment horizons.

Uniquely, within the academic context, the empirical research considers how market operators view these conflicts, via the findings of semi-structured interviews. The research shows that market operators (i) prioritise regulatory stability to ensure long-term asset business case validity, (ii) mitigate against uncertainty via higher financial returns and (iii) lobby legislators and regulators to manage change. Market operators recognise that diagonal conflicts exist and see the CJEU's use of *lex specialis* as a temporary expedient, surrounded by judicial and political risk.

The research proposes regulatory change to remove the 'special' status and outlined diagonal conflicts, including carbon pricing mechanisms, removing fossil fuel subsidies and enforcing network access rules. These proposals align the regulatory framework with EU free trade principles - to create long-term regulatory stability, valued by market operators.

Key Words: Renewables Regulatory Framework, Free Movement of Goods, State Aid

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S*ustainable energy is the golden thread that connects economic growth, increased social equity and an environment that allows the world to thrive. Low-carbon growth can foster decent jobs, empower women, promote equality, provide access to sustainable energy, make cities more sustainable and enhance the health of both people and the planet.’ UN Secretary-General Ban Ki-moon 12 May 2014¹*

O*ur problems are man-made. Therefore, they can be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings.’ John F. Kennedy, American University, 1963²*

¹ <https://www.un.org/press/en/2014/sgsm15839.doc.htm>

² <http://www.presidency.ucsb.edu/ws/?pid=9266>

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ABBREVIATIONS & DEFINITIONS

Abbreviation	Definition
ACER	The Agency for the Co-operation of Energy Regulators Set up in 2010 to help national energy regulators co-ordinate their actions at EU level
CJEU	Court of Justice of the European Union
COP 21	Twenty first Conference of the Parties to the United Nations Framework Convention on Climate Change (1994) (UNFCCC)
Developer Operator	An undertaking which develops and operates generating facilities and could also be known as a Generator
Distribution Network	A network of electricity cables, overhead lines and other apparatus and plant operating at a voltage of 132kV and below. It is the network most readily associated with the supply of electricity to consumers
ECSC	European Coal and Steel Community
EU	European Union – also used in this Thesis to mean previous incarnations such as the European Economic Community
EU-ETS	The EU's emissions trading system, launched in 2005, is a Europe-wide cap-and-trade scheme designed to incentivise power stations and other heavily polluting industries to reduce their carbon (CO ₂) emissions. In phases one and two (2005-12), each member-state determined its own cap, and permits to pollute were allocated to companies for free. In phase three, starting in 2013, the Commission set the overall cap, and many of the sectors covered, including the electricity sector that is responsible for most CO ₂ emissions within the EU, purchases permits in an auction process. Companies that have bought too few or too many permits can buy or sell them on in the EU carbon market
GATT	General Agreement on Tariffs and Trade 1997
Generator	An undertaking that produces electricity at a generating facility or power station. A single undertaking may have a dual role of generator and supplier (see definition below) but in regulatory terms they are separate functions and are subject to similar but different regulatory frameworks

Interconnector	A cross-border link between national electricity grid systems
IRR	A metric used in capital budgeting to estimate the profitability of potential investments. Internal rate of return is a discount rate that makes the net present value (NPV) of all cash flows from a project equal to zero
Rate of Return	The gain [or loss] on an investment over a specified time period, expressed as a percentage of the investment's capital cost. Gains on investments can also be defined as income received plus any capital gains realised on the sale of the investment
Regulators	EU and national institutions/regulators set up by statute (e.g. Ofgem or Bundesnetzagentur), and ministries and ministers when they act in an adjudicative capacity related to the applicable Regulatory Framework
Regulatory Framework	A framework equally composed of EU and the national laws (primary and secondary legislation), case law, guidelines and policy documents which seek to implement the EU laws
Regulatory forecastability	The forecastability of regulatory change. Where regulatory change is forecastable by Developer Operators, as investors in the industry, and as necessary by legislators, ministries and regulators. Forecasts of the Regulatory Framework take account of the following issues – the previous magnitude of regulatory change, stated duration of the policy (terminated date if any), publication of future policy/regulations, political instability as a potential for policy change, technology change, underlying price of the market, demand growth, potential for other generation assets to enter the market (ease of getting consents)
Regulatory Risk	Changes in the regulatory framework that were not forecastable at the time of the asset investment decision and therefore will include Regulatory Volatility, as well as regulatory changes that only become forecastable after the asset investment decision is made
Regulatory Stability	The current regulatory framework is wholly or materially stable with consistent implementation of an unchanging regulatory framework into the future, this can also be seen to be a

	framework that is robust to changes in the wider business environment. Stability also has a concept of time such that this stability would be over the lifecycle of the asset in question with changes only being brought about following full consultation and with agreement between legislators, regulators and assets developers
Regulatory Volatility	Regulatory change that is or has not been forecast by Developer Operators as investors in the industry and as necessary by legislators and regulators
Supplier	An undertaking which sells electricity to the end consumer. A single undertaking may have a dual role of generator (see definition above) and supplier but in regulatory terms they are separate functions and are subject to similar but different regulatory frameworks
TEU	Treaty on European Union 1992 (also referred to as the Maastricht Treaty)
TFEU	Treaty on the Function of the European Union – the consolidated Treaty following the execution of the Treaty of Lisbon 2009
Transmission Network	A network of electricity cables, overhead lines and other apparatus and plant operating at a voltage above 132kV. It is the network most readily associated with the bulk transport of electricity
UNFCCC	United Nations Framework Convention on Climate Change (1994)
WTO	World Trade Organisation.

Chapter 1 – Introduction

1.1 Introduction

The European Union (EU) is a unique economic and political organisation.³ Its main objective at its formation in 1957 was the fostering of economic cooperation: the principle being that countries linked by trade become economically interdependent and thus likely to avoid armed conflict.⁴ Since 1957, the EU has evolved to address changing political imperatives from a purely economic organisation into one spanning policy areas such as energy,⁵ climate change mitigation,⁶ environment and health,⁷ external relations and security,⁸ justice and migration.⁹ In addressing these expanded imperatives in relation to electricity the EU has evolved a complex, polycentric, multi-layered regulatory¹⁰ internal electricity market.¹¹ This research contemplates to what extent the EU's 21st century policy objective¹² to mitigate climate change via the promotion of renewable electricity,¹³ and the regulatory framework¹⁴ put in place to facilitate this promotion, is in a form of legal diagonal

³ European Commission 'Europe in 12 lessons' available at <https://publications.europa.eu/en/publication-detail/-/publication/009305e8-2a43-11e7-ab65-01aa75ed71a1> accessed 25 July 2017

⁴ Karin Arts and Anna Dickson 'EU development cooperation: from model to symbol?' in Karin Arts and Anna K Dickson (eds) *EU development cooperation: from model to symbol?* (Manchester University Press, 2004)

⁵ For an introduction to energy law see Raphael Heffron *Energy Law: An Introduction* (Springer, 2014); See Also Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016); Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

⁶ Change in average temperature of earth's surface is termed as climate change. 'Climate change is a natural phenomenon but post the industrial revolution period, human activity is cited as the important trigger for change in climatic condition on the earth. Anthropocentric activities increase the carbon concentration in the atmosphere that traps additional heat, leading to global warming and thus contributing to climate change'. - http://www.powerplantccs.com/ref/glos/climate_change.html accessed 19 April 2018

⁷ The TFEU contains Article 168 (protection of public health), Article 114 (approximation of laws) and Article 153 (social policy) to facilitate the promotion of health across the EU. - https://ec.europa.eu/health/policies/overview_en accessed 29 May 2018

⁸ The TFEU contains Article 75 (Area of freedom, security and justice) and Article 215 ('specific provisions on the common foreign and security policy'); see Case C-130/10 *Parliament v Council* ECLI:EU:C:2012:472; See https://europa.eu/european-union/topics/foreign-security-policy_en accessed 29 May 2018; See Also Annegret Bendiek, 'A Paradigm Shift in the EU's Common Foreign and Security Policy: From Transformation to Resilience' [2017] German Institute for International and Security Affairs; See Also Uwe Puetter, 'The Latest Attempt at Institutional Engineering: The Treaty of Lisbon and Deliberative Intergovernmentalism in EU Foreign and Security Policy Coordination' in Paul Cardwell (ed) *EU External Relations Law and Policy in the Post-Lisbon Era* (Asser Press, 2012), 17

⁹ Willem Maas, 'The Origins, Evolution, and Political Objectives of EU Citizenship', (2014) 15(5) German Law Journal, 797; See also European Commission 'EU in Brief', https://europa.eu/european-union/about-eu/eu-in-brief_en accessed 25 July 2017; Also to address changing 'goals to be reached, generally an improvement in some economic, political, or social feature of the community.' Ronald Dworkin *Taking Rights Seriously* (Bloomsbury, 2013), 22

¹⁰ Céline Gauer and Lars Kjølbye 'Energy' in by Ali Nikpay and Jonathan Faull (eds) *The EC Law of Competition* (Oxford University Press, 2014)

¹¹ Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 3

¹² Klaus Segbers, 'The New Global Landscape and Energy Politics in the 21st Century' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹³ It being recognised that bio-diesel is regarded as a renewable energy source within the EU, however, such sources are outside the scope of this research project, to allow the renewable electricity focus to be maintained

¹⁴ Within this research 'regulatory structure' is considered to be explicit legislative and administrative instruments, as well as controls over any taxes or subsidies (including 'support schemes') of all sorts, including entry rates, and other facets of economic activity – derived from Richard Posner, 'Theories of economic regulation' (1974) 5(2) *The Bell Journal of Economics and Management Science*, 335. 335; George Stigler, 'The Theory of Economic

conflict¹⁵ with one or more elements of primary EU legislation.¹⁶ The conflict being said to result from the different policy goals pursued at different levels of governance¹⁷ within the EU and the member states.

Furthermore, the research considers if electricity generated from renewable sources¹⁸ has been accorded a 'special status' as part of an overriding objective¹⁹ or an overriding public interest²⁰ to mitigate climate change due to the derogations it has received from EU free trade principles (e.g. free movement and anti-state aid provisions).

It should be noted a conflict being regarded as 'diagonal' when different elements of the regulatory framework are variously in conflict not with the Treaty Article from which they are derived (which would be vertical conflict), but other Treaty Articles. This research outlines that the renewable electricity regulatory framework is in diagonal conflict with three elements of the EU's free trade principles

- Free movement of goods: the national regulatory frameworks, as allowed by Article 3 of the Renewable Energy Directive,²¹ prevent the export of

Regulation' (1971) 2(1) *The Bell Journal of Economics and Management Science*, 3; Sam Peltzman, 'Towards a More General Theory of Regulation' (1976) 19(2) *Journal of Law & Economics*, 211. Furthermore 'Support Scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁵ Joost Pauwelyn, *Conflict of Norms in Public International Law* (Cambridge University Press 2003); see also Sumudu Atapattu, 'International Environmental Law and Soft Law: A New Direction or a Contradiction?' in Cecilia Bailliet (ed.), *Non-State Actors, Soft Law and Protective Regimes: From the Margins* (Cambridge University Press, 2012). In this research, diagonal conflict means a conflict between the regulatory framework of Directives and Regulations which surrounds renewable energy and the Treaty articles relating to three cornerstones of EU law: the free movement of goods; competition law; state aid. This is different from vertical conflict which would be, for example a Directive being in conflict with the Treaty article from which it is derived; or horizontal being the conflict between two Directives or two Treaty articles.

¹⁶ For an introduction to EU Energy Law See - Ana Stanic 'An Overview of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016); See also Hans Vedder, Anita Rønne, Martha M Roggenkamp, and Íñigo del Guayo, 'EU Energy Law' in Martha Roggenkamp, Catherine Redgwell, Anita Rønne, and Inigo del Guayo (eds) *Energy Law in Europe* (Oxford University Press, 2016)

¹⁷ Rike Krämer, 'The Notion of Diagonal Conflicts as a Key Concept of European Conflicts Law' in Christian Joerges (ed) *After Globalisation, New Patterns of Conflict and their Sociological and Legal Reconstructions* (ARENA Report No 4/11, 2011), 145, 158

¹⁸ Electricity known as 'renewable electricity' is in fact not renewable in its self, it is simply the originating energy source that is renewable, e.g. wind, solar and hydro. Therefore using the term 'renewable electricity' is simply a shorthand for electricity generated using a renewable form of energy as the motive force or fuel for the generating facility

¹⁹ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80

²⁰ Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – 'projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature'

²¹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

renewable electricity and restrict access to their renewables support schemes²² to renewable generating facilities from other member states,

- State aid prohibition of market segmentation (Article 107(1) TFEU): renewable electricity facilities are accorded priority dispatch²³ as a derogation from the normal dispatch rules thus relieving such facilities from the normal competitive process around dispatch, as well as granting them priority connection to the transmission or distribution network,²⁴ and
- state aid prohibition of anti-competitive pricing (Article 107 TFEU): due to the collection by emanations of the state²⁵ of monies from electricity consumers to pay one form of another of financial support to renewable electricity facility operators (Article 3(3) Renewable Energy Directive – defines such mechanisms of ‘support mechanisms’)²⁶ a feed-in tariff²⁷ which fixes the selling price for renewable electricity above that available in the wholesale electricity market, or the granting of a tradeable green certificate²⁸ to renewable electricity producers and also sometimes the granting of tax incentives, state aid has been found to have been made available.

²² means ‘any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments’ – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

²³ ‘Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints’ - P Palermo ‘Approaches to Generation Dispatch in Transmission Planning’ (2009) 135 CIGRE; therefore ‘Priority Dispatch’ is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

²⁴ Ibid, Article 16(2)(b)

²⁵ Means ‘a body, whatever its legal form, which has been made responsible, pursuant to a measure adopted by the state, for providing a public service under the control of the state and has for that purpose special powers beyond that which result from the normal rules applicable in relations between individuals.’ Case C-188/89 *Foster v British Gas plc* ECLI:EU:C:1990:313

²⁶ Thomas Schomerus, ‘Renewable energy: support mechanisms’ in Daniel Faber and Marjan Peeters (eds) *Climate Change Law* (Elgar, 2016)

²⁷ Feed-in Tariff is a contract mechanism between the owner of the renewable electricity generating facility and a purchasing organisation which provides a guaranteed price for generated output (usually providing an enhanced price above wholesale market prices) to the owner. This is generally combined with a purchase obligation. Typically the costs are borne either by consumers or by the public budget; See Bert Saveyn, Antonio Soria Ramírez and Tobias Wiesentha ‘Renewable electricity policy: feed-in tariffs versus tradeable green certificates’ [2008] Institute for Prospective Technological Studies

²⁸ Green certificates are instruments certifying the production of electricity from renewable sources. Electricity suppliers are expected to generate a given amount of electricity from renewable energy sources, an act which is demonstrated by the possession of a green certificate which can be traded and thus revenues recovered - Gestore Mercati Energetici, ‘About Green certificates’ <mercatoelettrico.org/en/mercato/cv/CosaSonoCv.aspx> accessed 25 January 2016

In addition to the diagonal conflicts the regulatory framework is also in vertical conflict with the 'polluter pays' principle (Article 191(2) TFEU) due to the acquiescence to emissions via elements of the regulatory framework such as the Emissions Trading Directive,²⁹ the Effort Sharing Decision³⁰ and the Industrial Emission Directive.

For the avoidance of doubt, it should be noted that this research does not concern 'conflict of laws' which is a procedural process dealing with the choice of jurisdiction (law) when a legal action implicates the substantive laws of more than one jurisdiction and a court must determine which law is most appropriate to resolve the dispute.³¹

Instead, this research shows, via case law analysis, that the legal diagonal conflict does exist and is able to quantify the importance of this conflict to market operators via empirical research. The empirical phase showed that certain market operators are concerned that these socio-political protections from the EU's free trade principle could be removed in a paradigm shift (defined in this research as 'regulatory volatility')³² thus undermining the business case of long-term investments in the renewables sector. The removal of support for renewable electricity generation is a business scenario market operators see as having more than a de-minimis probability – therefore regulatory stability³³ across the lifecycle of the assets is seen as unlikely, despite it being one of the main aspirations of any regulatory framework reported by the developer operators of these facilities.

The research stems from the socio-legal³⁴ tradition and uses the practical example renewable electricity promotion within the EU to consider if the CJEU is following an approach which would be favoured by Dworkin³⁵ that rights and moral considerations (in this case those legal concepts set out in the TFEU) should prevail over policy considerations or is the CJEU taking a Hart³⁶ legal positivist approach

²⁹ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

³⁰ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

³¹ Michael Hoffheimer *Examples & Explanations: Conflict of Laws* (Aspen, 2012); Adrian Briggs *The Conflict of Laws* (Oxford University Press, 2008); Ronald Graveson *Conflict of Laws: Private International Law* (Sweet and Maxwell, 1974)

³² Regulatory volatility is used within this work to mean changes in the regulatory framework that cannot be or are not forecastable – a high rate of volatility would be the rapid unforecastable change in the regulatory framework.

³³ Regulatory stability is the maintenance of the regulatory framework in place at the time the investment decision is made across the lifecycle of the asset

³⁴ Socio-legal research combines doctrinal and empirical methods which lead to the development of the grounded theory, as well as policy orientated studies - <https://sociolegaldu.wordpress.com/what-is-socio-legal-research>.

³⁵ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987) - Such that the law is an empire, liegemen to its methods and ideals, including jurisprudence, politics, sociology, as well as morals, ethics and aesthetics as these affect society; See also Ronald Dworkin *Taking Rights Seriously* (Bloomsbury, 2013), xi

³⁶ Herbert Hart *The Concept of Law* (ed) Penelope Bulloch and Joseph Raz (Clarendon Press, 1994); See Also Herbert Hart, 'Positivism and the Separation of Law and Morals' (1958) 71(4) *Harvard Law Review* 593, 601-2

which would seek to differentiate between law as it is and as it ought to be, by filling any gap in the existing law with a new rule and differentiating between what Hart calls 'primary and secondary law'.³⁷ (An introduction to jurisprudence – Section 2.3 and Annex 2)

The research sets out how the outcomes from the EU's political decision and the CJEU considerations operate from a set of concerns, even moral concerns, related to the abatement of climate change.³⁸

In seeking to better understand the above areas of legal conflict, and their business implications, as a key contribution to academic work, empirical research (using direct semi-structured interviews³⁹ and thematic analysis)⁴⁰ was undertaken with market participants to consider their perceptions of these conflicts and how they lead to the potential for change to the regulatory paradigm – so called regulatory risk.⁴¹ The empirical research is undertaken with directors or heads of function within various market operators by a researcher of equivalent status and provides an industry perspective that has not been investigated previously in scholarly literature. This research sets out to enrich the understanding of how EU law operates in commercial practice. The empirical research findings outlined in this thesis will assist legislators and regulators (both national and European) by setting out the effects of regulatory uncertainty⁴² as seen by renewables project developers and financiers. The empirical research also considers the risk mitigation measures they put in place by project developers. This element of the research will also be useful to those seeking an understanding of the issues before entering the renewables market.

This introductory chapter initially provides a summary of methods and protocols to generally resolve legal conflicts, before considering the issues to be

³⁷ Ibid, 95

³⁸ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

³⁹ William Harvey, 'Strategies for Conducting Elite Interviews' (2011) 11(4) *Qualitative Research*, 431

⁴⁰ David Silverman *Interpreting Qualitative Data* (SAGE, 2014); See Also Lorelli Nowell, Jill Norris, Deborah White and Nancy Moules, 'Thematic Analysis: Striving to Meet the Trustworthiness Criteria' (2017) 16(1) *International Journal of Qualitative Methods*; See also Moira Maguire and Brid Delahunt, 'Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars' (2017) 8(3) *All Ireland Journal of Teaching and Learning in Higher Education*

⁴¹ "Regulatory Risk" or 'Regulatory Uncertainty' is a process by which applicable regulators change the regulatory framework undermining the business case for an asset before the end of the asset's operational life or more acutely before its finance arrangements have been discharged (put more simply it is the probability that the 'rules of the game' existing at the time of the investment decision change during the operational life of the asset); See - Cameron Hepburn, 'Regulation by Prices, Quantities, or Both: A Review of Instrument Choice', (2006) 22 (2) *Oxford Review of Economic Policy*, 225; See also Harri Kalimo, Filip Sedefov and Max Jansson, 'Market definition as value reconciliation: The case of renewable energy promotion under the WTO Agreement on Subsidies and Countervailing Measures', (2017) 17(3), *International Environmental Agreements: Politics, Law and Economics*; Colin Kirkpatrick, David Parker and Yin-Fang Zhang, 'Foreign Direct Investment in Infrastructure in Developing Countries: Does Regulation Make a Difference?', (2006) 15(1) *Transnational Corporations*; Dieter Helm, Cameron Hepburn and Richard Mash, 'Credible Carbon Policy', (2003) 19(3) *Oxford Review of Economic Policy*, 438; Henok Birhanu Asmelash, 'Energy subsidies and WTO dispute settlement: Why only renewable energy subsidies are challenged', (2015) 18 (2) *Journal of International Economic Law*, 261;

⁴² Reza Banakar, 'Introducing Legal Uncertainty', in Reza Banakar (ed.), *Normativity in Legal Sociology: Methodological Reflections on Law and Regulation in Late Modernity* (Springer, 2014)

researched and research methods. The importance of energy policy and the need to resolve the trilemma of reliability, sustainability and affordability energy are also outlined.⁴³ The structure of the renewable energy regulatory framework is also outlined, together with key supporting principles such as carbon trading, sustainability,⁴⁴ the precautionary principle;⁴⁵ the 'polluter pays' principle⁴⁶ and security of supply.⁴⁷ The chapter also provides an introduction to the EU's free trade principles with which the renewable electricity regulatory framework conflicts. The chapter closes with an introduction to the research issues and methods used, finally summarising the content of each subsequent chapter.

1.2 Diagonal and Other Conflicts

Before considering the specific legal conflicts that are focus of this research, this section gives a brief outline of how legal conflicts occur and how they are managed more widely within EU and international law,⁴⁸ thus setting the discussion of diagonal conflicts within the wider legal context of conflict resolution. In this context international law is not considered a unified system but merely an aggregate of rules that states have contracted.⁴⁹

It has been stated⁵⁰ that legal uncertainty is an almost universal feature of all legal systems and there are four basic sources of this uncertainty, (i) value pluralism (a collision of legal norms - legal system is pluralist when it contains inconsistent rules),⁵¹ with legal issues being governed by two or more conflicting rules,⁵² (ii) linguistic vagueness, resulting from poorly drafted legal text, (iii) rule instability, due

⁴³ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper: See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁴⁴ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

⁴⁵ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

⁴⁶ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

⁴⁷ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

⁴⁸ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

⁴⁹ Herbert L A Hart *The Concept of Law* (Clarendon Press, 1961), 208

⁵⁰ Gunnar Beck, 'The Macro Level: The Structural Impact of General International Law on EU Law The Court of Justice of the EU and the Vienna Convention on the Law of Treaties' (2016) 35(1) *Yearbook of European Law*, 484

⁵¹ Nicholas Barber, 'Legal Pluralism and the European Union' (2006) 12(6) *European Law Journal*; See Also Klemen Jaklic *Constitutional Pluralism in the EU* (Oxford University Press, 2014)

⁵² For example free movement and exceptions there to – See Case C-438/05 *International Transport Workers' Federation and Finnish Seamen's Union v Viking Line ABP and OÜ Viking Line Eesti* ECLI:EU:C:2007:772 & Case C-342/05 *Laval un Partneri Ltd v Svenska Byggnadsarbetareförbundet* ECLI:EU:C:2007:809

to changing judicial thought and practice changing precedents⁵³ (iv) gaps in the law, where a court has to decide an issue which is governed by no obvious primary legal instruments or precedents.

This research considers a specific instance of value pluralism (conflict of norms) where diagonal and other conflicts exist between the EU's renewable electricity regulatory framework and the Treaty based EU's free trade principles (the consolidated TFEU). The research has found that the conflict exists as the renewable electricity regulatory framework allows nationally focused support schemes to be put in place and the sharing of competency between the EU and member states which allowed member states to confer an advantage to undertakings within its territory. The structure of the regulatory framework and the practices of member states conflict variously with free movement of goods and state aid. Also considered is the environmental principle known as the 'polluter pays'.

Before considering the specific instances of conflict for the renewable regulatory framework a general outline of legal conflicts is considered useful so that an understanding of how the concepts are designed and described in this research can be gained.

With the increase in cross border trade and globalisation generally the interaction of the legal systems of different member states and member states and the EU has also increased.⁵⁴ These interactions have highlighted several inconsistencies and conflicts between the legal systems of the member states (horizontal conflict) and between member states and the EU (vertical conflict)

A vertical conflict occurs where a secondary law does not correctly, or fully, implement the provisions of a primary or superior law.⁵⁵ This being characterised as where an EU Directive does not correctly implement the provisions of the TFEU article to which it is supposed to give effect, for example the Emissions Trading Directive,⁵⁶ which allows emissions trading, is in conflict with the 'polluter pays' principle, which as drafted in the TFEU would not (See Section 3.6).

⁵³ 'Precedent' being used as not only binding decisions – but also in the EU context with no doctrine of formally binding precedents - but where previous judicial decisions are principles upon which to issues can be adjudicated – See Gunnar Beck, 'The Macro Level: The Structural Impact of General International Law on EU Law The Court of Justice of the EU and the Vienna Convention on the Law of Treaties' (2016) 35(1) Yearbook of European Law, 484, 486

⁵⁴ Pierre Larouche, 'Coordination of European and Member State Regulatory Policy - Horizontal, Vertical and Transversal Aspects' (2004) 5(1) Journal of Network Industries, 277

⁵⁵ Christian Joerges, Poul Kjaer and Tommi Ralli, 'A New Type of Conflicts Law as Constitutional Form in the Postnational Constellation' (2011) 2(2) Transnational Legal Theory, 153, 155

⁵⁶ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

Similarly, a horizontal conflict occurs where two legal instruments of the same hierarchical position contain conflicting provisions. An EU example being the conflict between the Emissions Trading Directive and the Energy Efficiency Directive,⁵⁷ where the Efficiency Directive reduces energy demand without a feedback as to the number of emission allowance issued under the EU-ETS which undermines the price of carbon emissions (See Section 2.10.4).

A diagonal conflict is where a secondary legal instrument in one field conflicts with a superior legal instrument in another field. Within this research a diagonal conflict is a conflict between an instrument of EU secondary law (Directive or Regulation) and a Treaty Article other than that from which the instrument is derived. The concept is also widened to encompass the member state implementation of the principles contained within a Directive.

Diagonal conflicts have been explored by other scholars previously,⁵⁸ but not in the field of renewable electricity. One area is data privacy, where a diagonal legal conflict can be seen in a person's right to retain confidential certain elements of personal data (Article 16 TFEU), rights set out in more detail in the GDPR.⁵⁹ Whereas to prevent crime members states, and their associated security services, need access to data and, in certain situations, to allow the free movement of this data to other member states (Article 67 TFEU). Additionally, Article 56 TFEU states that the EU provides for the freedom to provide services, the ability to do so may be enhanced by the obtaining and manipulating of personal data. The ability to obtain and manipulate personal data is also restricted by the GDPR and thus a diagonal conflict can be said to exist.

With the renewable electricity regulatory framework an example of diagonal conflict is the conflict between the Renewable Energy Directive,⁶⁰ put in place to implement the obligation to support renewable energy, contained in Article 194

⁵⁷ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

⁵⁸ S Evju, 'Revisiting the Posted Workers Directive: Conflict of Laws and Laws in Contrast' (2009) 12 Cambridge Yearbook of European Legal Studies; See Also L Zucca *Constitutional Dilemmas: Conflicts of Fundamental Legal Rights in Europe and the USA* (Oxford University Press, 2008); A T Pérez *Conflicts of Rights in the European Union. A Theory of Supranational Adjudication* (Oxford University Press, 2010); Marco Dani, 'Economic and Social Conflicts, Integration and Constitutionalism in Contemporary Europe' [2009] London School of Economics Europe in Question Series Paper No. 13/2009 46; J H Gerards, 'Fundamental Rights and Other Interests: Should It Really Make a Difference?' in E Brems (ed), *Conflicts Between Fundamental Rights* (Intersentia 2008); T Novitz and P Syropis, 'Economic and Social Rights in Conflict: Political and Judicial Approaches to Their Reconciliation' (2008) 33 European Law Review; N Lindstrom, 'Service Liberalization in the Enlarged EU: A Race to the Bottom or the Emergence of Transnational Political Conflict?' (2010) 48 Journal of Common Market Studies 1307; Marco Dani, 'Rehabilitating Social Conflicts in European Public Law' (2012) 18 European Law Journal 621; M Husovec, 'Intellectual Property Rights and Integration by Conflict: The Past, Present and Future' (2016) 18 Cambridge Yearbook of European Legal Studies, 239

⁵⁹ Regulation (EU) 2016/679 'The protection of natural persons with regard to the processing of personal data and on the free movement of such data' OJ L 119/1

⁶⁰ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

TFEU, which allows member states to restrict their renewables support schemes⁶¹ to only generation facilities within their sovereign territory, in contravention of the free movement obligations contained in Articles 28 to 35 TFEU.⁶²

This research's specific example of pluralism is where the legal instruments regulating renewable electricity conflict as they fulfil certain conditions (i) they exist contemporaneously, (ii) contain contradictory provisions,⁶³ (iii) may overlap in scope⁶⁴ and (iv) importantly '*contain obligations which cannot be complied with simultaneously*'⁶⁵ and are therefore likely to be in diagonal conflict with certain provisions of the TFEU.⁶⁶

It should be noted that different legal systems, international, EU and national laws may have various rules to resolve legal conflicts and diagonal conflicts. There are so called horizontal techniques such as *lex specialis*, where the most specialist legal instrument would prevail, or *lex posterior* where the most recent instrument would prevail.⁶⁷ The so called vertical techniques relate to hierarchy, where one instrument would be seen to have superiority over another, however this is said to have limited application in international law as different tribunals usually have no formal hierarchy between them.⁶⁸ The only practical exception to the use of such technique in international law would be in the application of a *jus cogens*⁶⁹ guideline for the interpretation of norms.⁷⁰ There are also mutual recognition conventions, so called 'tolerance', where a margin of appreciation is observed, although this is seen

⁶¹ means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁶² Hans Vedder, Anita Rønne, Martha M Roggenkamp and Íñigo del Guayo, 'EU Energy Law' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

⁶³ Wilfred Jenks 'The Conflict of Law-Making Treaties' (1953) 30 *British Yearbook of International Law*, 401

⁶⁴ Joost Pauwelyn *Conflict of Norms in Public International Law* (Cambridge University Press, 2003), 176; See also Erich Vranes, 'The Definition of 'Norm Conflict' in International Law and Legal Theory' (2006) 17(2) *European Journal of International Law*, 395, 412

⁶⁵ WTO Panel Report, *Indonesia Certain Measures Affecting the Automobile Industry*, WT/DS54/R, WT/DS59/R, WT/DS64/R, adopted on 23 July 1998, at note 649

⁶⁶ Martin Borowski, 'Legal Pluralism in the European Union' in Agustín José Menéndez and John Erik Fossum (eds) *Law and Democracy in Neil MacCormick's Legal and Political Theory: The Post-Sovereign Constellation* (Springer, 2011)

⁶⁷ Dirk Pulkowski *The Law and Politics of International Regime Conflict* (Oxford University Press, 2014)

⁶⁸ Anne Peters, 'The refinement of international law: From fragmentation to regime interaction and politicization' (2017) 15(3) *International Journal of Constitutional Law*, 671, 671

⁶⁹ *Jus cogens* literally means 'compelling law'. It designates norms from which no derogation is permitted by way of particular agreements. Note the Vienna Conventions on the Law of Treaties stipulate that a treaty is void if it conflicts with *jus cogens* (Art. 53 and 64)

⁷⁰ Andrea Bianchi, 'Human Rights and the Magic of Jus Cogens' (2008) 19(3) *The European Journal of International Law*, 491

to simply enshrine any differences rather than bringing the regimes together⁷¹ as such is not particularly useful in reducing fragmentation.

Despite the above described techniques, the most commonly applied technique is the systematic interpretation methods set out in the Vienna Convention⁷² and interpretational protocols such as *lex posterior*, *lex superior* and *lex specialis*;⁷³ each discussed in turn below.

The Vienna Convention sets out a system which allows the resolution of conflicts between treaties. The Vienna Convention states (unless there is a specific article in the treaties to the contrary or the parties to the treaties have developed definitive interpretive practice),⁷⁴ that (i) it cannot be applied retroactively,⁷⁵ (ii) the most recent treaty prevails in the event of a conflict,⁷⁶ unless the most recent treaty conflicts with a ‘*peremptory norm of general international law*’ in which case it is void,⁷⁷ (classifying an event or practice as a ‘peremptory norm’ has not been universally successful – potential examples would be the abuse of children or vulnerable adults and human trafficking).⁷⁸ Therefore the *lex posterior* principle in Article 30 seems to be the most readily usable element of the Vienna Convention. However, this concept does not seem to have been applied by the EU in the context of the diagonal conflict between the renewable electricity regulatory framework and the TFEU.

Turning to *Lex superior*, which is a means of declaring a legal hierarchy between legal instruments such that superior laws are deemed to take precedence over others. The main issues with *lex superior* are (i) the need to have previously determined distinct instruments and (ii) a means of determining which rule is superior.⁷⁹ The EU due to the position of the Treaty, secondary legislation and the resulting legislation of member states should be an organisation which is able to implement a *lex superior* method to resolving conflicts between legal instruments.

⁷¹ Joseph Weiler, ‘Why Should Europe be a Democracy: The Corruption of Political Culture and the Principle of Tolerance’ in Francis Snyder (ed) *The Europeanisation of Law: The Legal Effects of European Integration* (Bloomsbury, 2000)

⁷² Vienna Convention on the law of treaties (with annex). Concluded at Vienna on 23 May 1969. Authentic texts: English, French, Chinese, Russian, and Spanish. 1155 U.N.T.S. 331, 8 I.L.M. 679, entered into force Jan. 27, 1980 - available at <https://treaties.un.org/doc/publication/unts/volume%201155/volume-1155-i-18232-english.pdf> accessed 16 September 2017

⁷³ Anne Peters, ‘The refinement of international law: From fragmentation to regime interaction and politicization’ (2017) 15(3) *International Journal of Constitutional Law*, 671, 692

⁷⁴ *Ibid* Article 31(3)

⁷⁵ *Ibid* Article 28

⁷⁶ *Ibid* Article 30(3)

⁷⁷ *Ibid* Article 53

⁷⁸ Janelle Diller, ‘Economic, Social and Cultural Human Rights: The Journey towards Peremptory Norms in International Law’ (2018) 36(1) *Nordic Journal of Human Rights*, 19; See Also Kamrul Hossain, ‘The Concept of Jus Cogens and the Obligation Under The U.N. Charter’ (2005) 3(1) *Santa Clara Journal of International Law*, 72

⁷⁹ Silvia Zorzetto, ‘The Lex Specialis Principle and its Uses in Legal Argumentation: An Analytical Inquiry’ (2012) 3 *Economia*, 61, 66

In pursuit of an application of the *lex superior* principle Article 351(1) TFEU states that agreements concluded between member states or between a member state and a third country do not affect the provisions of the TFEU (despite EU member states being signatory to the Vienna Convention). Also, Article 351(2) TFEU states that where a member state enters into an agreement which conflicts with the TFEU the member state shall take appropriate steps to remove the conflict by amending the arrangement with the third party. Thus, the EU has taken a *lex superior* approach to its legal instruments over national laws or other treaties executed by member states. This approach was also confirmed by the CJEU in cases such as *Costa v ENEL*, *Van Gen den Loos* and others.⁸⁰ This approach is very clearly visible in the concept of 'autonomy of EU law'. It being noted that *Van Gend* holds EU law to be a new order of international law.⁸¹ To benefit from this new legal order Member States have limited their sovereign rights.⁸² It having been stated that to allow the operation of principles of EU law such as 'direct effect' the EU needs to confirm the autonomous nature of its legal system relative to international law.⁸³ The CJEU has stated that EU law has its own constitutional framework and founding principles, with a sophisticated institutional structure and an extensive legal framework ensuring its operation.⁸⁴ However, in relation to renewable electricity regulation, the EU and CJEU have implemented a *lex specialis*⁸⁵ (the 'special status' outlined above)⁸⁶ method to resolving the conflict between the renewable electricity regulatory framework and the provisions of the TFEU, the method being confirmed in *Parliament v Council*⁸⁷ and the cases outlined in Chapter 3. The CJEU in applying the *lex specialis* approach has resolved the legal

⁸⁰ Case 6/64, *Flaminio Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66; See also Case 26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen*, ECLI:EU:C:1963:1 ; Case C-266/16 *Western Sahara Campaign UK v Commissioners for Her Majesty's Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs* ECLI:EU:C:2018:118; Case C-284/16 *Slowakische Republik v Achmea BV* ECLI:EU:C:2018:158

⁸¹ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

⁸² Case 26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen*, ECLI:EU:C:1963:1, para 4

⁸³ Jan-Willem Rossem 'The Autonomy of EU Law: More is Less?' in Ramses Wessel and Steven Blockmans *Between Autonomy and Dependence: The EU Legal Order under the Influence of International Organisations* (Springer, 2013), 22; See also Opinion 1/91 Agreement between EEC & European Economic Area ECLI:EU:C:1991:490

⁸⁴ Opinion 2/13 Opinion pursuant to Article 218(11) TFEU — Draft international agreement — Accession of the European Union to the European Convention for the Protection of Human Rights and Fundamental Freedoms — Compatibility of the draft agreement with the EU and FEU Treaties ECLI:EU:C:2014:2454, para 158

⁸⁵ *Lex specialis* is a method of resolving legal conflicts where specialist legal provisions take precedence over more general provisions.

⁸⁶ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80

⁸⁷ Case C-490/10 *Parliament v Council* ECLI:EU:C:2012:525 para 65 to 67

conflicts between the renewable electricity framework and the provisions of TFEU, on necessity and ‘overriding objective’⁸⁸ grounds.⁸⁹

The empirical research phase herein finds that market operators view the use of the *lex specialis* approach as a potential source of regulatory risk, a finding discussed on Section 1.3 as a contribution to knowledge.

1.3 Research Issues – Contribution to Knowledge

This research contributes to existing knowledge in the five main ways outlined below and further detailed in Section 5.3.

Firstly, the research uses case law analysis to consider the interaction of EU renewable electricity law,⁹⁰ free movement (Article 34 TFEU)⁹¹ and state aid (Article 107 TFEU),⁹² building on the academic literature surrounding vertical and horizontal conflicts,⁹³ to discuss diagonal conflicts in the context of renewable electricity.⁹⁴ The research shows the consistent use of *lex specialis* by the CJEU in resolving these diagonal conflicts.

Secondly, the research points out that the CJEU’s use of *lex specialis* in favour of the renewable electricity law⁹⁵ denies consistent application of other provisions of the Treaty, such as the network provisions contained in Articles 170 to 172 TFEU. The research thus suggests other means of supporting renewable electricity capacity that would temper the continued use of *lex specialis*.⁹⁶

⁸⁸ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

⁸⁹ Odile Ammann, ‘The Court of Justice of the European Union and the Interpretation of International Legal Norms: To Be or Not to Be a “Domestic” Court?’ in Nicolas Levrat and Pola Cebulak (eds) *The European Union and International Law* (Schulthess, 2015)

⁹⁰ Renewable Energy Directive, Emissions Trading Directive, Effort Sharing Decision, Industrial Emissions Directive, Energy Efficiency Directive, Electricity Market Directive, Energy Taxation Directive and others

⁹¹ Hans Vedder, Anita Rønne, Martha M Roggenkamp and Íñigo del Guayo, ‘EU Energy Law’ in Martha Roggenkamp, Catherine Redgwell, Anita Rønne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

⁹² Kamel Mortelmans, ‘Towards Convergence in the Application of the Rules on Free Movement and on Competition?’ (2001) 38,3 *Common Market Law Review*, 613, 613.

⁹³ Sybe de Vries ‘The Protection of Fundamental Rights Within Europe’s Internal Market After Lisbon: An endeavour for more harmony’ in Sybe de Vries, Ulf Bernitz and Stephen Weatherill (eds) *The Protection of Fundamental Rights in the EU After Lisbon* (Hart, 2013); Philippe Sands and Paolo Galizzi *Documents in European Community Environmental Law* (Cambridge University Press, 2006); Eva Heidbreder ‘Strategies in multilevel policy implementation: moving beyond the limited focus on compliance’ (2017) 24(9) *Journal of European Public Policy*, 1367;

⁹⁴ Rike Krämer, ‘The Notion of Diagonal Conflicts as a Key Concept of European Conflicts Law’ in Christian Joerges (ed) *After Globalisation, New Patterns of Conflict and their Sociological and Legal Reconstructions* (ARENA Report No 4/11, 2011), 145, 158

⁹⁵ Renewable Energy Directive, Emissions Trading Directive, Effort Sharing Decision, Industrial Emissions Directive, Energy Efficiency Directive, Electricity Market Directive, Energy Taxation Directive and others

⁹⁶ Aviel Verbruggen and Volkmar Lauber, ‘Basic Concepts for Designing Renewable Electricity Support Aiming at a Full-scale Transition by 2050’ (2009) 37 *Energy Policy* 5732, 5734

Thirdly, building on general academic literature surrounding legal conflict resolution,⁹⁷ by looking at an analysis framework which divides the Directives forming the renewables regulatory framework according to the body which holds the competence⁹⁸ for that area of EU law (e.g. Commission, member state or a shared competence) and if the Directive is based on a command and control (C&C)⁹⁹ or market-based structure. This original analysis framework has allowed consideration to be given to which type of Directive C&C or market based combined with the competence holding structure induces a higher number of conflicts.

The research further showing the Luxembourg Court has allowed inconsistency to develop between its findings to the detriment of regulatory stability, allowing retroactive changes to the regulatory framework in national renewable support schemes¹⁰⁰ (e.g. Spain (*Charanne*)¹⁰¹ and Italy (*Scat Puntì*).¹⁰² These cases highlight issues surrounding the interaction of EU law, (i) its primacy,¹⁰³ (ii) the right to regulate (Energy Charter Treaty),¹⁰⁴ (iii) consumer protection (*RWE Vertrieb*¹⁰⁵ and *Schulz-Egbringhoff*),¹⁰⁶ (iv) network infrastructure concessions (ASM

⁹⁷ Sybe de Vries 'The Protection of Fundamental Rights Within Europe's Internal Market After Lisbon: An endeavour for more harmony' in Sybe de Vries, Ulf Bernitz and Stephen Weatherill (eds) *The Protection of Fundamental Rights in the EU After Lisbon* (Hart, 2013); Philippe Sands and Paolo Galizzi *Documents in European Community Environmental Law* (Cambridge University Press, 2006); Eva Heidbreder 'Strategies in multilevel policy implementation: moving beyond the limited focus on compliance' (2017) 24(9) *Journal of European Public Policy*, 1367

⁹⁸ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁹⁹ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

¹⁰⁰ means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁰¹ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf

¹⁰² Decision 10/2015, *Scat Puntì Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

¹⁰³ Case C-6/64, *Flaminio Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66; See also Case C-26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen*, ECLI:EU:C:1963:1; Case C-266/16 *Western Sahara Campaign UK v Commissioners for Her Majesty's Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs* ECLI:EU:C:2018:118; Case C-284/16 *Slowakische Republik v Achmea BV* ECLI:EU:C:2018:158

¹⁰⁴ The Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-treaty-1994/energy-charter-treaty>; For an introduction to the Energy Charter Treaty see Graham Coop and Bernhard Maier, 'External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 66

¹⁰⁵ Case C-92/11 *RWE Vertrieb AG v Verbraucherzentrale Nordrhein-Westfalen e.V.*, ECLI:EU:C:2013:180

¹⁰⁶ Joined Cases C-359/11 and C-400/11 *Alexandra Schulz v Technische Werke Schussental GmbH und Co. KG and Josef Egbringhoff v Stadtwerke Ahaus GmbH*, ECLI:EU:C:2014:2317

Brescia)¹⁰⁷ and (v) the support for renewable energy sources (*Plantanol*)¹⁰⁸ – the Court restricting changes to support for bio-diesel).

Fourthly, the empirical research contributes by setting out the importance to market participants of the conflicts described and their view of the justification and robustness (long-term legal sustainability) of the granting to renewable electricity a ‘special status’¹⁰⁹ by way of a derogation from the application of free movement and undistorted competition and other anti-state aid provisions contained in Article 107(1) TFEU¹¹⁰ as part of the application of the overriding objective.¹¹¹

The empirical research also found Developer Operators have a negative perception of the value¹¹² of their investments in renewable generating facilities because of intervention by national and EU regulatory functions in what is perceived to be a liberalised electricity market. It being found that the Developer Operators have been prepared to litigate in relation to the imposition of price caps (*Federutility*¹¹³ and *Enel*)¹¹⁴ on the grounds of protection under, international investment law (*Commission v Slovakia*)¹¹⁵ and the right to property (*Essent*).¹¹⁶

Lastly the recommendations for the reshaping of the regulatory framework set out in Chapter 5 outline a requirement to increase transmission network interconnectedness, simplifying and focusing the regulatory framework on emissions trading and energy efficiency is not known to be suggested in academic literature to date.

1.4 Research Methods

¹⁰⁷ Case C-347/06 *ASM Brescia SpA v Comune di Rodengo Saiano*, ECLI:EU:C:2008:416

¹⁰⁸ Case C-201/08 *Plantanol GmbH & Co. KG v Hauptzollamt Darmstadt*, ECLI:EU:C:2009:539

¹⁰⁹ Geert van Calster, ‘Climate Change and Renewable Energy as a Super Trump for EU Trade Law However all *Essent* clear’ (2014) 1 2014 Renewable Energy Law & Policy Review, 60

¹¹⁰ Catherine Barnard, *The Substantive Law of the EU: The Four Freedoms*, (Oxford University Press 2007)

¹¹¹ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹¹² Joanna Lewis, ‘The rise of renewable protectionism: Emerging trade conflicts and implications for low carbon development’ (2014) 14(4) *Global Environmental Politics*, 10

¹¹³ Case C-265/08 *Federutility and others v Autorità per l’energia elettrica e il gas* ECLI:EU:C:2010:205

¹¹⁴ Case C-242/10 *Enel Produzione SpA v Autorità per l’energia elettrica e il gas* ECLI:EU:C:2011:861

¹¹⁵ Case C-264/09 *Commission v Slovak Republic*, ECLI:EU:C:2011:580

¹¹⁶ Joined Cases C-105/12 to C-107/12 *Staat der Nederlanden v Essent NV, Essent Nederland BV, Eneco Holding NV and Delta NV*, ECLI:EU:C:2013:677

Renewable electricity, to fulfil the overriding objective of environmental protection,¹¹⁷ has been granted a 'special status'¹¹⁸ in EU law. The methodological basis for this research has been shaped by the analysis of this 'special status' via mixed socio-legal methods of doctrinal and empirical research.

The doctrinal research provides a systematic discussion of the EU renewable electricity regulatory framework, analysing the 'special status' and then considers future developments.¹¹⁹ The doctrinal approach uses a constitutionalist perspective¹²⁰ to consider rule of law and separation of power issues within the conflicts outlined. Whilst recalling the 'special status' could be following a Dworkin constructive approach to interpretation looking at political or moral concerns, related to climate change.¹²¹

In addition to the doctrinal analysis, the empirical phase, using thematic analysis¹²² was undertaken to understand the views of renewable electricity market participants as to the conflicts and their effect on the market and business practice.

This phased approach not only generates an understanding of the EU's structures,¹²³ but how the shared competences¹²⁴ between the EU and the member states have been used to put in place a hierarchy of EU and national law to support the development of renewable electricity generation, before seeking to understand the views of market participants via empirical research.

The EU's renewable electricity regulatory framework lends itself to constitutional analysis,¹²⁵ considering the implementation of the principles set out by

¹¹⁷ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹¹⁸ Geert van Calster, 'Climate Change and Renewable Energy as a Super Trump for EU Trade Law: However all Essent clear' (2014) 1 *Renewable Energy Law & Policy Review*, 60

¹¹⁹ Terry Hutchinson and Nigel Duncan 'Defining & describing What We do: Doctrinal Legal Research' (2012) 17(1) *Deakin Law Review*, 83, 101; See Also Susan Bartie, 'The Lingering Core of Legal Scholarship' (2010) 30(3) *Legal Studies*, 345; Paul Chynoweth, 'Legal Research' in Andrew Knight and Les Ruddock (eds), *Advanced Research Methods in the Built Environment* (Wiley-Blackwell, 2008) 37

¹²⁰ Rafael Leal-Arcas and Andrew Filis, 'Conceptualizing EU Energy Security through an EU Constitutional Law Perspective' (2013) 36 *Fordham International Law Journal*, 1224; see also Joseph H H Weiler, *The Constitution of Europe – "Do the new clothes have an emperor?"*, (Cambridge University Press 1999); Allan Rosas and Lorna Armati *EU Constitutional Law: An Introduction* (Hart Publishing, 2012); Robert Schütze *European Constitutional Law* (Cambridge University Press, 2012)

¹²¹ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

¹²² Lorelli Nowell, Jill Norris, Deborah White and Nancy Moules, 'Thematic Analysis: Striving to Meet the Trustworthiness Criteria' (2017) 16(1) *International Journal of Qualitative Methods*; See also Moira Maguire and Brid Delahunt, 'Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars' (2017) 8(3) *All Ireland Journal of Teaching and Learning in Higher Education*

¹²³ Robert Schütze - *European Constitutional Law* (Cambridge University Press, 2012), 83

¹²⁴ Robert Schütze, 'EU Competences: Existence and Exercise' in Damian Chalmers and Anthony Arnall (eds) *The Oxford Handbook of European Union Law* (Oxford University Press, 2015): See Also Article 4(2)(e) (Environment) and (i) TFEU (Energy) provide for a shared competence between the EU and the member state - "Shared competence" means that both the EU and its member states may adopt legally binding acts in the area concerned. However, the member states can do so only where the EU has not exercised its competence or has explicitly ceased to do so.

¹²⁵ Nicholas Tsagourias, Introduction – Constitutionalism: a theoretical roadmap' in Nicholas Tsagourias (ed) *Transnational Constitutionalism: International & European Perspectives* (Cambridge University Press 2007)

its founders (Spaak Report),¹²⁶ through to the implementation of environmental protection as a 21st century objective.¹²⁷ A constitutionalist approach also allows the EU's structures¹²⁸ to be analysed with a separation of powers, rule of law and political democracy perspective.¹²⁹

A multi-level¹³⁰ and separation of powers perspective helps in the analysis of where authority ('competence'¹³¹ in the EU context) and policy-making are shared across the EU's organisations (namely Commission, EU Parliament, Council of Ministers, the CJEU and increasingly ACER)¹³² and member states, with the member states agreeing the Treaty, the Commission drafting the Directives (subject to the normal legislative process) and the member states putting in place frameworks at the national level against which market participants seek to develop and operate electricity facilities.¹³³

Besides outlining the regulatory framework and considering the CJEU's application of *lex specialis* within the case law, the doctrinal phase allowed the development of research questions for the empirical research. The empirical research was undertaken in accordance with the terms of Anglia Ruskin University's Research Ethics Policy, the university's research ethics clearance being obtained on 12 April 2017.

The empirical research phase provides a cross reference as to the importance to market operators of the legal conflicts analysed during the doctrinal

¹²⁶ Paul-Henri Spaak, 'Intergovernmental Committee on European Integration. The Brussels Report on the General Common Market (abridged, English translation of document commonly called the Spaak Report) (June 1956) Information Service High Authority of The European Community for Coal and Steel

¹²⁷ COM(2010) 639 final, 'Energy 2020 - A strategy for competitive, sustainable and secure energy', Available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0639&from=EN>; See Also Klaus Segbers, 'The New Global Landscape and Energy Politics in the 21st Century' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹²⁸ The EU is composed of 7 institutions - the European Parliament; the European Council; the Council of the European Union (simply called 'the Council'); the European Commission; the Court of Justice of the European Union; the European Central Bank - Article 13 of the Treaty on European Union

¹²⁹ Giacinto della Cananea, 'Is European Constitutionalism Really Multilevel' [2009] German-Italian conference of public law

¹³⁰ Gary Marks, Liesbet Hooghe and Kermit Blank, 'European Integration from the 1980's; State-centric v Multi-level Governance' (1996) 34(3) *Journal of Common Market Studies*, 341

¹³¹ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹³² For an Introduction to the role of ACER see - Raphael Heffron 'Shared Governance': ACER and the Roles of the National Energy and Competition Regulators in the EU' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

¹³³ Fritz Scharpf, 'Introduction: The Problem Solving Capacity of Multi-Level Governance' (1997) 4(4) *Journal of European Public Policy*, 520

phase (so called multi-method or triangulation approach).¹³⁴ The empirical research overcomes one of the weaknesses¹³⁵ of purely doctrinal research which is that doctrinal analysis will identify an issue, but cannot directly calibrate the importance of the issue to practitioners in the field.¹³⁶ The combination of the doctrinal and empirical allows the clear setting out of the issues of diagonal conflict, and then lets market operators highlight the importance of these conflicts, as well as how they are mitigated by market operators.¹³⁷

The empirical research consisted of qualitative semi-structured¹³⁸ interviews conducted with persons who have a senior position within their organisation or have a particular expertise.¹³⁹ The participants were senior developers, regulatory specialist, lawyers (external and in-house) and insurers, chosen to understand their differing perspectives on the legal and economic drivers of the specified areas of EU Law.¹⁴⁰

The interview format was chosen as it allowed the participants to speak widely, on and around the subject under discussion, allowing ideas and insights to emerge which may not have been forthcoming as part of answers to a simple survey.¹⁴¹ Participants were invited to participate by three methods (i) direct contact, (ii) a general invitation issued at a post experience energy sector conference¹⁴² and (iii) a general invitation issued via 'LinkedIn'.

Analysis of the data obtained was undertaken using a thematic approach¹⁴³ with data coding being undertaken to develop a meaningful expression of research

¹³⁴ John Brewer and Albert Hunter *Foundations of Multimethod Research: Synthesizing Styles* (Sage, 2006): See also Ronet Bachman and Russell Schutt *The Practice of Research in Criminology and Criminal Justice* (Sage, 2007)

¹³⁵ Sanne Taekema and Bart van Klink, 'On the border: Limits and Possibilities of Interdisciplinary Research', in Bart van Klink and Sanne Taekema (eds.), *Law and Method, Interdisciplinary Research into Law* (Tübingen: Mohr Siebeck, 2011), 7; See Also Elizabeth Chambliss, 'When do Facts Persuade? Some Thoughts on the Market for 'Empirical Legal Studies' (2008) 71(2) *Law and Contemporary Problems* 17

¹³⁶ Paddy Hillyard 'Invoking Indignation: Reflections on Future Directions of Socio-legal Studies' (2002) 29 *Journal of Law and Society*, 650

¹³⁷ Reza Banakar, 'On the Paradox of Contextualisation', in Reza Banakar (ed.), *Normativity in Legal Sociology: Methodological Reflections on Law and Regulation in Late Modernity* (Springer, 2014), 91

¹³⁸ William Harvey, 'Strategies for Conducting Elite Interviews' (2011) 11(4) *Qualitative Research*, 431; See Also Thomas Diefenbach, 'Are case studies more than sophisticated storytelling?: Methodological problems of qualitative empirical research mainly based on semi-structured interviews' (2009) 43 *Quality & Quantity*, 875; Lisa Webley, 'Qualitative Approaches to Empirical Legal Research' in Peter Cane and Herbert Kritzer, (eds) *The Oxford Handbook of Empirical Legal Research* (Oxford University Press, 2010)

¹³⁹ The participants would be those described in academic literature as 'elite' – Kari Lancaster, 'Confidentiality, anonymity and power relations in elite interviewing: conducting qualitative policy research in a politicised domain' (2017) 20(1), 93,93; See also Zoë Slote Morris, 'The Truth about Interviewing Elites' (2009) 29(3), 209

¹⁴⁰ Robert Weiss, *Learning from Strangers: The Art and Method of Qualitative Interview Studies* (Free Press, 1994)

¹⁴¹ Ray Galvin, 'How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?' (2015) 1 *Journal of Building Engineering* 2,2

¹⁴² Global EPC Contract and Risk Management Conference (London / 12-13 OCT 2017)

¹⁴³ Lorelli Nowell, Jill Norris, Deborah White and Nancy Moules, 'Thematic Analysis: Striving to Meet the Trustworthiness Criteria' (2017) 16(1) *International Journal of Qualitative Methods*; See also Moira Maguire and Brid Delahunt, 'Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars' (2017) 8(3) *All Ireland Journal of Teaching and Learning in Higher Education*

findings.¹⁴⁴ The themes found ranged from a perception of regulatory uncertainty, business risks and mitigations to views on future developments in the regulatory framework.

The research was conducted in 16 interviews, with the number of interviews being seen to provide a spectrum of market operator views and achieve substantive 'data saturation'¹⁴⁵ such that additional data acquisition was unnecessary. Whilst several authors¹⁴⁶ have sought to define methods for allowing the declaration of data saturation (such as no new themes emerging or coded data being repeated by interviewees), it has also been demonstrated that for interview research amongst 'elite' populations saturation can occur within a data set of only twelve interviews, with basic elements of meta-themes being present with as few as six interviews.¹⁴⁷

Additionally, numerical methods were considered to give a measure of the probability of a theme emerging from the interviewees and to consider when saturation was achieved within the research data for all practical purposes.¹⁴⁸ The numerical methods shows that based on a population of elite market operators of 16 respondents, however, as a result of secondary discussions some 22 interviews were held such that if the view was only held by 10%, or less, of the population confidence would be over 90% that the view or theme has emerged (the numerical methods used are outlined in more detail in Annex 8).

¹⁴⁴ Coding is an analysis process whereby the transcripts of the interviews are broken down by phrase, verb or noun and by so doing labelling it (a 'code') and grouping these parts into a more meaningful expression which can be developed into a theme or finding. Code is a tag or label to give meaningful expression to a parcel of text – developed from Matthew Miles and Michael Huberman *Qualitative Data Analysis* (SAGE, 1994)

¹⁴⁵ 'Data saturation' is generally defined in literature as the point where no additional or new themes will emerge from the collection of more data - Barney Glaser and Anselm Strauss *Discovery of Grounded Theory Strategies for Qualitative Research* (Routledge, 1967); See Also Melanie Birks and Jane Mills *Grounded Theory: A Practical Guide*, (2nd edn. Sage, 2015); Lisa Given *100 Questions (and Answers) About Qualitative Research* (Sage, 2016); Ellen Olshansky, Generating theory using grounded theory methodology. In: Mary de Chesnay (ed.) *Nursing Research Using Grounded Theory: Qualitative Designs and Methods in Nursing* (Springer, 2015), 19-28

¹⁴⁶ Benjamin Saunders, Julius Sim, Tom Kingstone, Shula Baker, Jackie Waterfield, Bernadette Bartlam, Heather Burroughs and Clare Jinks, 'Saturation in qualitative research: exploring its conceptualization and operationalization' (2018) 52(4) *Quality & Quantity*, 1893; Clive Boddy, 'Sample size for qualitative research' (2016) 19(4) *Journal of Qualitative Market Research*, 426; Alan Bryman, 'How many qualitative interviews is enough?' in Sarah Baker and Rosalind Edwards (eds.) *How Many Qualitative Interviews is Enough? Expert Voices and Early Career Reflections on Sampling and Cases in Qualitative Research*, ESRC National Centre for Research Methods, University of Southampton, Southampton (2012), 18; Jill Francis, Marie Johnston, Clare Robertson, Liz Glidewell, Vikki Entwistle, Martin Eccles and Jeremy Grimshaw 'What is an adequate sample size? Operationalising data saturation for theory-driven interview studies' (2010) 25(10) *Psychology & Health*, 1229; Patricia Fusch and Lawrence Ness, 'Are we there yet? Data saturation in qualitative research' (2015) 20(9) *The Qualitative Report*, 1408; Greg Guest, Arwen Bunce and Laura Johnson, 'How Many Interviews Are Enough? An Experiment with Data Saturation and Variability' (2006) 18(1) *Field Method*, 59; Konstantina Vasileiou, Julie Barnett, Susan Thorpe and Terry Young, 'Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period' (2018) *BMC Medical Research Methodology*; Monique Hennink, Bonnie Kaiser and Vincent Marconi, 'Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough?' (2016) 27(4) *Qualitative Health Research*, 591

¹⁴⁷ Greg Guest, Arwen Bunce and Laura Johnson, 'How Many Interviews Are Enough? An Experiment with Data Saturation and Variability' (2006) 18(1) *Field Methods*, 59

¹⁴⁸ Ray Galvin, 'How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?' (2015) 1 *Journal of Building Engineering*, 2,2

1.5 EU's Need for Available Energy – Importance of Energy Policy & Stable Regulatory Framework

Energy policy generally, and that related to electricity specifically, is important at the EU and member state level.¹⁴⁹ In recent years the availability of electricity has become core to the member states' ability to discharge their economic and social functions.¹⁵⁰ Every aspect of modern life¹⁵¹ requires available and affordable energy - from mass communications and transport, to food production and health. Therefore 'security of supply'¹⁵² has become a highly political issue for EU members.¹⁵³ It being said that accessible and reliable supplies of electricity, have the characteristics of a 'public good'.¹⁵⁴ In relation to this 'public good' the EU Commission is said to be acting as a 'trustee of the regional interest'.¹⁵⁵ In the long term, the EU's energy security is inseparable from, and significantly fostered by, its need to move to a competitive, low-carbon economy which reduces the use of imported fossil fuels.¹⁵⁶ Energy policy is an area¹⁵⁷ where member states share sovereignty to derive a better future for all.¹⁵⁸

With this background, the EU's current energy policy has two main themes;

(i) the lowering of carbon emissions¹⁵⁹ to reduce the environmental impact of

¹⁴⁹ Penelope Crossley, 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁵⁰ Catherine Redgwell, 'Energy, Environment and Trade in the European Community' (1994) 12 *Journal of Energy & Natural Resources Law* 128, 140

¹⁵¹ Thomas-Olivier Léautier and Claude Crampes, 'Liberalisation of the European electricity markets: a glass half full' (2016) Toulouse School of Economic Management Working Paper available at <http://fsr.eui.eu/liberalisation-european-electricity-markets-glass-half-full> accessed 21 November 2017

¹⁵² Security of Supply means 'the ability to ensure the continued satisfaction of essential energy needs by means of, on the one hand, sufficient internal resources exploited under acceptable economic conditions and, on the other, of accessible, stable and diversified energy sources' found in http://europedia.moussis.eu/books/Book_2/6/19/03/?all=1 accessed 14 March 2018

¹⁵³ COM 330 (2014) 'European Energy Security Strategy'

¹⁵⁴ Public goods are those goods that cannot be provided selectively to only certain members of the public; See Nicole Robins and Tridevi Chakma, 'State Aid in Energy under the Spotlight: The implications of the Hinkley Point Decision' (2016) 2 *European State Aid Quarterly*, 247, 251

¹⁵⁵ Gerd Winter, 'Introduction' in Gerd Winter (ed.), *Multilevel Governance and Global Environmental Change* (Cambridge University Press, 2006), 24 – The general duties of the Commission in this regard being set out in Article 17(1) TEU: The Commission shall promote the general interest of the Union and take appropriate initiatives to that end. It shall ensure the application of the Treaties, and of measures adopted by the institutions pursuant to them. It shall oversee the application of Union law under the control of the Court of Justice of the European Union. It shall execute the budget and manage programmes. It shall exercise coordinating, executive and management functions, as laid down in the Treaties. With the exception of the common foreign and security policy, and other cases provided for in the Treaties, it shall ensure the Union's external representation. It shall initiate the Union's annual and multiannual programming with a view to achieving interinstitutional agreements'

¹⁵⁶ COM 330 (2014) 'European Energy Security Strategy', 3; See Also Penelope Crossley, 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁵⁷ Matthew Burke and Jennie Stephens, 'Energy democracy: Goals and policy instruments for sociotechnical transitions' (2017) 33 *Energy Research & Social Science*, 35

¹⁵⁸ John Gough, *The Social Contract* (Clarendon Press, 1936), 2-3; see also Celeste Friend *Social Contract Theory* (International Encyclopaedia of Philosophy, 2004)

¹⁵⁹ 'Carbon Gases are those gases, such as water vapour, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride, that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.' - definition contained in Dag Klackenberg, Christian Egenhofer and Kyriakos Gialoglou

electricity generation and (ii) increasing security of supply¹⁶⁰ by reducing the dependence on imported energy (shortening supply chains).¹⁶¹ These policy objectives are delivered by binding targets for carbon emission reductions, renewable energy use (both electricity and bio-diesel) and energy savings.¹⁶² The European Council of March 2007 emphasised that the EU is committed to transforming Europe into a highly energy-efficient and low greenhouse-gas-emitting economy; making a firm independent commitment to achieve a 20% reduction in carbon emissions by 2020 compared to 1990 levels.¹⁶³

A stable regulatory framework has been acknowledged by the EU as a key enabler in achieving these goals.¹⁶⁴ This was a factor confirmed by the Developer Operators during the empirical research set out in Chapter 5.

1.6 EU Renewable Electricity Law – Its Development and the Electricity Trilemma

The EU's energy policy seeks to reconcile several issues (i) it seeks to resolve the trilemma of reliability, sustainability and affordability,¹⁶⁵ as well as, in more recent times, reducing climate change and achieving electricity market liberalisation¹⁶⁶ and (ii) enhancing its social acceptance,¹⁶⁷ which allows development permits to be obtained readily. To resolve these issues, a holistic regulatory framework¹⁶⁸ is

'Rethinking the EU Regulatory Strategy for the Internal Energy Market' (2004) Task Force Report No 52, Centre for European Policy Studies

¹⁶⁰ European Commission COM (2000) 769 'Towards a European Strategy for the Security of Energy Supply' defines energy security as 'The uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development'

¹⁶¹ European Commission COM (2014) 330 'European Energy Security Strategy'; see also European Commission 'The European Union Leading In Renewables' Dec 2015, 7; see also Dejan Ž. Đorđević and Milan Veselinović 'The Policy of Renewable Energy Sources in the Function of the Environmental Protection in the EU' (2015) 53 (3) Economic Themes 343

¹⁶² Article 2.1 Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-> In relation to a general introduction to the regulatory framework see - European Commission COM(2013) 169 Green Paper 'A 2030 framework for climate and energy policies'

¹⁶³ EU Decision (406/2009/EC) 23 April 2009, 'The effort of Member States to reduce their carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (known as the 'Effort Sharing Decision'), OJ L 140/137, preamble para 4

¹⁶⁴ Directive 2009/28/EC Renewable Energy Directive, Recital 25

¹⁶⁵ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper: See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

¹⁶⁶ Christian Egenhofer, *Integrating Security of Supply, Market Liberalization and Climate Change Appearing in Michael Emerson, Readings in European Security*, (Vol 4 Centre for European Policy Studies, 2007); See also Hazel Nash, 'The European Commission's Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan' (2009) 17 Journal of Cleaner Production 496

¹⁶⁷ Lucia Elghali, Roland Clift, Philip Sinclair, Calliope Panoutsou and Ausillo Bauen, 'Developing a Sustainability Framework for the Assessment of Bioenergy Systems' (2007) 35 Energy Policy 6075; See also Birgitte Olsen, 'Renewable energy: public acceptance and citizens' financial participation in Daniel Faber and Marjan Peeters (eds) *Climate Change Law* (Elgar, 2016)

¹⁶⁸ Carmelina Cosmi, Jolanta Dvarionienė, Isabel Marques, Senatro Di Leo, Giedrius Gecevičius, Inga Gurauskienė, Gisela Mendes, Catarina Selada, 'A Holistic Approach to Sustainable Energy Development at Regional Level: The RENERGY Self-Assessment Methodology' (2015) 49 Renewable and Sustainable Energy Reviews, 693, 706

needed that considers and balances environmental and socio-economic concerns.¹⁶⁹ Energy justice is also able to contribute to resolving the trilemma by using an equitable approach to energy use and infrastructure investment.¹⁷⁰

The EU's energy policy has thus evolved to be focused on two limbs (i) sustainability and (ii) security of supply. This section gives a brief history of the development of the EU's energy policy, before considering the sustainability, security of supply and their satellite concepts.

In addressing the economic imperatives of the 1950s, the Treaty of Rome makes scant mention of environmental protection or climate change.¹⁷¹ Therefore the regulatory policy of the time focused on making electricity available, reliable and affordable; with little focus on environmental concerns.¹⁷²

The 1972 Paris Heads of State Summit is regarded as the first step to an EU environmental and energy policy,¹⁷³ leading to the November 1973¹⁷⁴ Environmental Action Programme.¹⁷⁵

The EU's initial environmental policy was not universally acclaimed and was said to be '*incidental, responsive and unarticulated*'.¹⁷⁶ Additionally it was said to be inconsistent leading to pervasive neglect of its cumulative impacts.¹⁷⁷

EU energy policy has evolved from these first steps due to climate change being seen as a complex and intractable problem, characterised as '*super wicked*',¹⁷⁸ with far reaching, long-term and potentially irreversible consequences, an '*issue from hell*'¹⁷⁹ and the '*hardest political problem the world has ever had to deal with*'.¹⁸⁰ The EU has described climate change in terms of risk by stating '*one*

¹⁶⁹ Matthew Burke and Jennie Stephens, 'Political power and renewable energy futures: A critical review' (2018) 35 Energy Research & Social Science 78

¹⁷⁰ Raphael Heffron, Darren McCauley, and Benjamin Sovacool, 'Resolving society's energy trilemma through the Energy Justice Metric' (2015) 18 Energy Policy, 168

¹⁷¹ Ludwig Krämer, 'The Genesis of EC Environmental Principles' (2003) 7 College of Europe

¹⁷² Francis McGowan, 'Can the European Union's Market Liberalism Ensure Energy Security in a Time of "Economic Nationalism"' (2008) 4(2) Journal of Contemporary European Research, 93, 94

¹⁷³ Christoph Knill and Duncan Liefferink, 'The Establishment of EU Environmental Policy' in Andrew Jordan and Camilla Adelle (eds), *Environmental Policy in the European Union: Contexts, Actors and Policy Dynamics* (3rd edn, Earthscan 2012); See Also Bulletin of the European Communities, (No. 10, 1972), 'Meeting of the Heads of State or Government – Paris 19-21 October 1972 - The First Summit Conference of the Enlarged Community - Official Communiqué,

¹⁷⁴ Philipp Hildebrand, 'The European Community's environmental policy, 1957 to 1992', in David Judge (ed) *A Green Dimension for the European Community*, (Frank Cass 1992), 13

¹⁷⁵ European Community COM 'Programme of Action of the European Communities on the Environment' 1973 OJ 112; See Also Philipp Hildebrand, 'The European Community's environmental policy, 1957 to 1992', in David Judge (ed) *A Green Dimension for the European Community*, (Frank Cass 1992), 13; See Also Stanley Johnson and Guy Corcelle, *The Environmental Policy of the European Communities*, (Graham & Trotman, 1989)

¹⁷⁶ Laurens Jan Brinkhorst 'The Road to Maastricht' (1993) 20(1) Ecology Law Quarterly, 7

¹⁷⁷ Uma Outka, 'The Renewable Energy Footprint' (2011) 30 Stanford Environmental Law Journal, 36; See also Steven Ferrey, 'The Failure of International Global Warming Regulation to Promote Needed Renewable Energy' (2010) 37 Boston College Environmental Affairs Law Review, 67

¹⁷⁸ Richard Lazarus, 'Super Wicked Problems & Climate Change: Restraining the Present to Liberate the Future' (2009) Cornell Law Review 1153

¹⁷⁹ Al Gore, *The Future: Six Drivers of Global Change* (Random House 2013) 314

¹⁸⁰ The Economist 'Getting Warmer' The Economist, 3 December, 2009, available (subscription required) at: http://www.economist.com/specialreports/displaystory.cfm?story_id=E1_TQJJQRSN assessed 15 September 2015

of the greatest challenges facing today's environmental policymakers is how to deal with complex risks, such as those associated with climate change'.¹⁸¹ These sentiments have resulted in the CJEU describing climate change as 'one of the greatest social, economic and environmental threats the world faces'.¹⁸² Therefore environmental, energy policy and the drafting of the various EU Treaties over the last 30 years have been guided, amongst other objectives, by the need to mitigate climate change and increase security of supply,¹⁸³ with a , realisation that environmental pollution had to be addressed multi-nationally.¹⁸⁴ This process limited national sovereignty¹⁸⁵ and the developed a regional approach to address the issues. The Single European Act in 1986 included Articles related to the environment, giving economic and ecological objectives a more equivalent status¹⁸⁶ conferring on environmental protection, weight and importance.¹⁸⁷

Reports for individual EU member states (the 2006 Stern Review,¹⁸⁸ to the 2018 Graham Institute Study)¹⁸⁹ strengthened the resolve of member states to act on climate change and placed environmental protection at the centre of EU energy policy, due to the reported economic,¹⁹⁰ environmental¹⁹¹ and social/ethical¹⁹² costs of failing to mitigate climate change. Hence environmental protection (reducing carbon emissions) developed into one of the EU's leading objectives for the 21st century.¹⁹³ It should be noted that the EU's climate change policy has effectively

¹⁸¹ Science for Environment Policy 'The Precautionary Principle: decision making under uncertainty' (2017) Future Brief 18. Produced for the European Commission DG Environment by the Science Communication Unit, UWE, Bristol

¹⁸² Case T-263/07 *Estonia v Commission* ECLI:EU:T:2009:351 par 49

¹⁸³ Dieter Helm, 'The European framework for energy and climate policies' *Energy Policy* Vol 64 January 2014, 29, 31

¹⁸⁴ Christoph Knill and Duncan Liefferink, 'The Establishment of EU Environmental Policy' in Andrew Jordan and Camilla Adelle (eds), *Environmental Policy in the European Union: Contexts, Actors and Policy Dynamics* (3rd edn, Earthscan 2012)

¹⁸⁵ Anita Halvorssen, 'International Law and Sustainable Development – Tools for Addressing Climate Change' (2010-2011) 39 *Denver Journal International Law & Policy*, 397

¹⁸⁶ John McCormick, *Environmental Policy in the European Union* (Palgrave 2001)

¹⁸⁷ Adapted from Ronald Dworkin *Taking Rights Seriously* (Bloomsbury, 2013), 43 – stating that principles of law have the 'dimensions of weight or importance'

¹⁸⁸ Nicholas Stern, 'Stern Review: The economics of climate change', (2006), Report presented to the UK Prime Minister and the Chancellor of the Exchequer on the Economics of Climate Change. available at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm: accessed 27 Sept 2017

¹⁸⁹ Simon Dietz, Alex Bowen, Baran Doda, Ajay Gambhir, and Rachel Warren, 'The Economics of 1.5°C Climate Change' (2018) 43 *Annual Review of Environment and Resources*

¹⁹⁰ William Nordhaus *The Climate Casino: Risk Uncertainty and Economics of a Warming World* (Yale University Press, 2013); See also Gernot Wagner and Martin Weitzman *Climate Shock: The Economic Consequences of a Hotter Planet* (Princeton University Press, 2015)

¹⁹¹ Daniel Bodansky *The Art and Craft of International Environmental Law* (Harvard University Press, 2010)

¹⁹² Stephen Gardiner, Simon Caney and Dale Jamieson *Climate Ethics: Essential Readings* (Oxford University Press, 2010); See Also Pope Francis 'Laudato Si – Care for our common home' [2015] http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html; See Also Raphael Heffron and Darren McCauley, 'Achieving sustainable supply chains through energy justice' (2014) 123 *Applied Energy* 435

¹⁹³ Klaus Segbers, 'The New Global Landscape and Energy Politics in the 21st Century' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017); See Also World Commission on Environment and Development ('Brundtland Commission'), *Our Common Future*, (Oxford University Press, 1987), 43; Rajendra Pachauri and Andy Reisinger, *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Inter-Governmental Panel on Climate

addressed the 'flow' of carbon emissions into the atmosphere, rather than particularly addressing the 'stock' of atmospheric carbon, when global warming is a stock problem. Therefore, although under used and under enforced, the Carbon Capture and Storage Directive¹⁹⁴ and the polluter-pays principle are important.¹⁹⁵

An outline of the concepts upon which the EU's renewable electricity regulatory framework is built is set out in Annex 1 (emissions reduction, sustainability, precautionary principle and 'polluter pays')

1.7 EU Carbon Emissions Reduction Objective

The objective of reducing carbon emissions is very much within the sustainability limb of the EU's renewable energy policy. It is known that the energy industry and the EU are complex entities¹⁹⁶ and as such the EU has set out the general framework in its 2020 energy strategy.¹⁹⁷ This strategy was set out despite challenges to the science of global warming from many traditional energy companies.¹⁹⁸

The complexity is reflected in the regulatory framework which contains a broad set of initiatives ranging from support for the development of renewable electricity (Renewable Energy Directive),¹⁹⁹ to the carbon emissions reductions of the Effort Sharing Decision.²⁰⁰ As the renewable energy regulatory framework is based on a Directives structure, it requires member state implementation which

Change 2009) , 104; see also Miranda Schreurs and Yves Tiberghien, 'Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation' (2007) 7(4) *Global Environmental Politics* 19; Sebastian Oberthur and Claire Roche Kelly, 'EU Leadership in International Climate Policy: Achievements and Challenges' (2008) 43(3) *International Spectator*; John Schmidt, 'Why Europe Leads on Climate Change', (2008) 50(4) *Survival* 83

¹⁹⁴ Council Directive 2009/31/EC 23 April 2009 on the geological storage of carbon dioxide OJ L140/114 (Carbon Capture & Storage Directive)

¹⁹⁵ Glenn Harrison 'Stocks and Flows' in Steven Durlauf and Lawrence Blume (eds) *The New Palgrave Dictionary of Economics* (Palgrave Macmillan, 2008); See Also Daniel Bodansky, Jutta Brunnée, and Lavanya Rajamani *International Climate Change Law* (Oxford University Press, 2017)

¹⁹⁶ Giuseppe Martinico *The Tangled Complexity of the EU Constitutional Process: The Frustrating Knot of Europe* (Routledge, 2013) 36; See also Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 27

¹⁹⁷ COM(2010) 639, 'Energy 2020 - A strategy for competitive, sustainable and secure energy', Available at <<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0639&from=EN>> accessed 16 July 2017; see also Michal Natorksi and Anna Surrallés, 'Securitising Moves to Nowhere? The Framing of the European Union's Energy Policy' (2008) 4 *Journal of Contemporary European Research* 71

¹⁹⁸ David Levy, 'Business and the Evolution of the Climate Regime: The Dynamics of Corporate Strategies' in David Levy and Peter Newell (eds), *The Business of Global Environmental Governance* (Massachusetts Institute of Technology, 2005) 73

¹⁹⁹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

²⁰⁰ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

creates a multi-layered²⁰¹ and polycentric²⁰² set of obligations. However, the renewable electricity regulatory framework goes beyond the EU's Kyoto Protocol.²⁰³

The EU's 2020 energy strategy²⁰⁴ states that the well-being of the EU is dependent on safe, secure, sustainable and affordable energy. The 2020 energy strategy also acknowledges that electricity generation produces around 80% of the EU's carbon emissions;²⁰⁵ therefore a focus of energy policy is the reduction in carbon emissions from electricity generation.²⁰⁶

The current EU regulatory framework is characterised as '20-20-20 by 2020'²⁰⁷ – a 20% reduction in carbon emissions,²⁰⁸ switching 20% of electricity generation capacity to renewables and achieving a 20% reduction in energy usage due to energy efficiency by the year 2020.²⁰⁹

Fulfilling these goals has required member state's electricity markets to focus on the achievement of environmental targets, rather than driving for the lowest possible cost of electricity production.²¹⁰ These EU environmental targets should be seen against the forecast increase of overall global energy demand of 28% by 2040.²¹¹ The EU's energy regulatory framework therefore does not rely on individual behavioural change, but seeks to shape consumption patterns at the societal level.²¹²

²⁰¹ Bruno Simma, 'Bilateralism and Community Interest in the Law of State Responsibility' in Yoram Dinstein (ed), *International Law at a Time of Perplexity: Essays in Honour of Shabtai Rosenne* (Martinus Nijhoff 1989) 822-23

²⁰² Giuseppe Bellantuono 'Renewables, Investments, and State Aids: Exploring the Legal Side of Polycentricity' [2017] Institute of European Law Birmingham Law School Working Paper 04/2017

²⁰³ Rafael Leal-Arcas and Andrew Filis, 'Legal Aspects of the Promotion of Renewable Energy within the EU and in Relation to the EU's Obligation in the WTO' (2014) 3(1) Renewable Energy Law & Policy

²⁰⁴ COM(2010) 639 final, 'Energy 2020 - A strategy for competitive, sustainable and secure energy', Available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0639&from=EN>

²⁰⁵ *ibid* para 1

²⁰⁶ Rajendra Pachauri and Andy Reisinger, *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Inter-Governmental Panel on Climate Change 2009), 104; See Also The definition relating to which types of electricity facilities are regarded as renewable is contained in the 2014 Guidelines on state aid for environmental protection and energy (Communication from the Commission 'Guidelines on State aid for environmental protection and energy 2014-2020' - (2014/C 200/01)) - with renewable energy including wind, solar and hydropower. It is interesting to note that nuclear energy, which also does not emit carbon, is excluded whilst biomass, landfill gas, sewage treatment plant gas and biogases are defined as renewable, all of which emit carbon as a bio-product of combustion to generate electricity

²⁰⁷ Eurostat 'Europe 2020 indicators - climate change and energy' (2016), available at http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_climate_change_and_energy accessed 10 January 2016

²⁰⁸ EU COM 0482/2016 'on binding annual carbon emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement' available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0482> accessed 1 May 2018, Recital 1

²⁰⁹ Andreas Löschel and Oliver Schenker, 'On the Coherence of Economic Instruments: Climate, Renewables and Energy Efficiency Policies' (2014) Energy Tax & Regulatory Policy Conference CESInfo

²¹⁰ David Newbury 'Reforming Competitive Electricity Markets to Meet Environmental Targets' (2012) 1(1) Journal of Economics of Energy & Environmental Policy

²¹¹ Energy Information Administration, 'International Energy Outlook 2017' 14 September 2017 available at [https://www.eia.gov/outlooks/ieo/pdf/0484\(2017\).pdf](https://www.eia.gov/outlooks/ieo/pdf/0484(2017).pdf) accessed 9 January 2018

²¹² Matthew Burke and Jennie Stephens, 'Political power and renewable energy futures: A critical review' (2018) 35 Energy Research & Social Science, 78; See also Anna-Kaisa Kosenius and Markku Ollikainen, 'Valuation of environmental and societal trade-offs of renewable energy sources' (2013) 62 Energy Policy 1148; See also Kirsten Gram-Hanssen, 'Consuming Technologies – Developing Routines' (2008) 16(11) Journal of Cleaner Production 1181

The EU's regulatory framework restricts carbon emissions from industrial and domestic activities via the Industrial Emissions Directive²¹³ and the Energy Efficiency Directive²¹⁴ respectively. The regulatory framework has also put in place a trading mechanism for carbon emissions and credits (via the European Emissions Trading Mechanism, EU-ETS, implementing the Emissions Trading Directive²¹⁵).²¹⁶ To control the emission of the six gases named in the Kyoto Protocol,²¹⁷ not traded via the EU-ETS, the Effort Sharing Decision²¹⁸ puts in place a regulatory mechanism for these gases (although bring the EU-ETS and the Kyoto gases within a common trading platform is a future development – Section 2.11). The Renewable Energy Directive also establishes a target for 10%²¹⁹ of road transport fuel to be derived from renewable sources across all member states by 2020.²²⁰

It is the number of interlocking Directives and Regulations that make the renewable energy regulatory framework a masterpiece of complexity,²²¹ developed from the so called first,²²² second²²³ and third²²⁴ energy regulatory packages to the 2030²²⁵ and 2050²²⁶ energy strategies.

1.8 Security of Supply

²¹³ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

²¹⁴ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

²¹⁵ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

²¹⁶ Michael Grubb and Karsten Neuhoff, 'Allocation & Competitiveness in the EU Emissions Trading Scheme: Policy Overview', (2006) 6 Journal of Climate Policy, 35

²¹⁷ Kyoto Protocol to the United Nations Framework Convention on Climate Change (1998) Annex A - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆); available at http://unfccc.int/kyoto_protocol/items/2830.php

²¹⁸ Commission Decision No 406/2009/EC 23 April 2009 Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision) OJ L 40/136

²¹⁹ Article 21 (1) Renewable Energy Directive

²²⁰ Bio-diesel is divided into two main types (i) *Bio-diesel*: produced through a process known as transesterification, which separates glycerine from vegetable oil, leaving bio-diesel. The glycerine can then be used in the making of other products, such as soap. Bio-diesel can be used as a straight fuel, or blended with mineral diesel to create a diesel blend - both types can be used without any engine modification. Current EU regulations allow for blends of transport fuel to be up to 7% bio-diesel, (ii) *Bio-ethanol*: produced from plants such as maize, wheat, sugar beet and sugar cane, through a process of fermentation, distillation and dehydration. Brazil is currently the world's largest producer, with almost half of all fuel used in Brazilian cars being bio-ethanol. It can be used as a 5% blend with petrol in unmodified engines. Through the Fuel Quality Directive, EU regulations now permit blends of up to 10% bio-ethanol. Higher blends or use as a direct substitute for petrol require some engine modifications. Council Directive 98/07/EC 23 April 2009 The specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce carbon emissions (Fuel Quality Directive) OJ L140/88

²²¹ Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) Legal Aspects of EU Energy Regulation (Oxford University Press, 2016), 27

²²² Council Directives 96/92/EC concerning common rules for the internal market in electricity and 98/30/EC on common rules for the internal market in natural gas

²²³ ²²³ http://ec.europa.eu/competition/sectors/energy/overview_en.html

²²⁴ <https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation>

²²⁵ COM(2016) 860 30 November 2016 'Clean Energy For All Europeans'; See

www.ec.europa.eu/clima/policies/strategies/2030_en#tab-0-1

²²⁶ EU COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) available at www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1 accessed 23 March 2018

As stated, an objective of EU energy policy is security of supply,²²⁷ reducing the dependence on imported energy (shortening energy supply chains),²²⁸ reducing political risk associated with energy supply,²²⁹ making energy production EU based and sustainable by using renewables.²³⁰ Security of supply is the second limb of the EU's energy policy and as such seeks to ensure that energy is available as needed.

The 'security of supply' objective of the EU's energy framework is considered essentially delivered by a focus on the reduction of carbon emissions and the growth of renewable energy – hence these goals are part of the same strategy, with work to achieve one helping deliver the other.²³¹

The EU is considered not to focus on sustainability but on the proxy objective of carbon emissions reduction, as most of the renewables energy regulatory framework targets emissions reduction (Emissions Trading Directive,²³² Renewable Energy Directive,²³³ Industrial Emissions Directive,²³⁴ and the Effort Sharing Decision)²³⁵ rather than security of supply. As an example, the EU's Security of Electricity Supply Directive²³⁶ is only focussed on the short-term robustness of the dispatch²³⁷ of electricity rather than being focussed on the diversification of sources of electricity in terms of fuel type and geographic location.

As such, 'security of supply' and the second limb of the EU's energy policy does not form a focus of this research project, with the focus remaining with the balance of the Directives seeking to reduce carbon emissions.

²²⁷ Penelope Crossley 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds.) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

²²⁸ European Commission COM (2014) 330 'European Energy Security Strategy'; see also European Commission 'The European Union Leading In Renewables' Dec 2015, 7; see also Dejan Đorđević and Milan Veselinović 'The Policy of Renewable Energy Sources in the Function of the Environmental Protection in the EU' (2015) 53 (3) *Economic Themes* 343

²²⁹ Gokhan Ozkan, 'Global Energy Security, International Politics and Renewable Energy Sources' (2018) 5(1) *International Journal of Multidisciplinary Approach and Studies*, 29

²³⁰ <https://ec.europa.eu/energy/en/topics/renewable-energy> accessed 28 December 2017

²³¹ Francesco Gracceva and Peter Zeniewski, 'A systemic approach to assessing energy security in a low-carbon EU energy system' (2015) 123 *Applied Energy*, 345

²³² Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

²³³ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

²³⁴ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 (Industrial Emission Directive)

²³⁵ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

²³⁶ Directive 2005/89/EC of 18 January 2006 'concerning measures to safeguard security of electricity supply and infrastructure investment' OJ L 33/22

²³⁷ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' -P. Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 *CIGRE*

1.9 EU Free Trade Principles – Free Movement & State Aid

It can be seen from the above that the EU and the member states have expanded their environmental and energy objectives over the years, with competences²³⁸ either held exclusively by the Commission or member states or shared between them. To gain an understanding of the nature of the legal conflict between the renewable regulatory framework and EU free trade principles this section gives a brief introduction to those principles, allowing a better understanding of the research issues outlined in Section 1.3.

The EU maintains that the operation of the single market is based on what has been called the ‘four freedoms’²³⁹, a shorthand for the ability of goods, services, capital and persons to move freely within the EU without customs formalities or tariff barriers.²⁴⁰ The application of free movement has been declared in *Opel v Council of Europe* to require ‘equal treatment of individuals and economic operators’.²⁴¹ Additionally cases such as *REWE*²⁴² and *Commission v France (Spanish Strawberries)*²⁴³ have affirmed that the free movement of goods is a fundamental principle of the EU. The provision of free movement of goods is set out within Articles 28 to 36 TFEU as well as case law such as *Dassonville*²⁴⁴ (the prohibition of measures or potentially hindering trade) *Cassis de Dijon*²⁴⁵ (removal of technical barriers to trade), *Keck*²⁴⁶ and *Mickelsson & Roos*²⁴⁷ (selling arrangements in a market must not discriminate between domestic and imported goods). These cases have clear implications for the rules related to power station dispatch,²⁴⁸ the

²³⁸ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, ‘Competences in EU energy policy’ in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

²³⁹ Catherine Barnard, *The Substantive Law of the EU: The Four Freedoms*, (Oxford University Press 2007)

²⁴⁰ Kamiel Mortelmans, ‘Towards a convergence of the application of the rules on free movement and Competition’ (2001) *Common Market Law Review* 613, 613

²⁴¹ Case T-115/94 *Opel Austria GmbH v Council of the European Communities* ECLI:EU:T:1997:3 para 108

²⁴² Case 37/83 *Rewe-Zentral AG v Direktor der Landwirtschaftskammer Rheinland* ECLI:EU:C:1984:89 para 18

²⁴³ C-265/95 *Commission v France* [1997] (Spanish Strawberries) ECLI:EU:C:1997:595, para 24

²⁴⁴ Case 8/74, *Procureur du Roi v Dassonville* ECLI:EU:C:1974:82, para 5

²⁴⁵ Case 120/78, *REWE-Zentrale AG v Bundesmonopolverwaltung für Branntwein (Cassis de Dijon)* ECLI:EU:C:1979:42

²⁴⁶ Cases C-267/91 & C-268/91 *Keck and Mithouard* ECLI:EU:C:1993:905; the *Keck* judgement was also followed in 1993 in Case 292/92 *Hunermund v Landesapothekerkammer Baden-Württemberg* ECLI:EU:C:1993:932

²⁴⁷ Case C-142/05, *Åklagaren v Mickelsson and Roos* ECLI:EU:C:2009:336; See also, more recently, Case C-639/11 *Commission v Poland* ECLI:EU:C:2014:173; Case C-16/12 *Commission v Lithuania* ECLI:EU:C:2012:426; Case C-428/12 *Commission v Spain* ECLI:EU:C:2014:218. The last time the *Keck* and *Mithouard* was cited by the CJEU as good law dates from 2010: Case C-108/09, *Ker-Optika bt v ÁNTSZ Dél-dunántúli Regionális Intézköz* ECLI:EU:C:2010:725, para 51.

²⁴⁸ ‘Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that

cross-border trading of electricity and the development of energy trading hubs²⁴⁹ (further discussed in Section 3.5). In short, the Treaty articles and case law confirm that organisations engaged in legitimate activities in one-member state can only have restricted access across the EU (the so called ‘market access test’ - *Cassis de Dijon*)²⁵⁰ if the restrictions can be justified via an overriding objective²⁵¹ and are proportionate.²⁵²

The EU also prohibits anti-competitive behaviour and practices (including potential effects of the same – *Consten & Grundig*)²⁵³ such as price-fixing²⁵⁴ or market-sharing cartels²⁵⁵ via Articles 101(collusion) and 102 TFEU (abuse of a dominant position (although some justifications were confirmed by the CJEU - *Hilti*).²⁵⁶ Such behaviour is prohibited regardless of it being between companies at the same economic level (horizontal) or at different levels in the supply chain (vertical).²⁵⁷ As the renewable electricity regulatory framework is put in place by the state and not commercial undertakings the anti-competitive behaviours and practices are tested using the concept of potential distortion of competition contained in Articles 107 TFEU relating to state aid.

network, at the lowest possible cost, subject to transmission capacity and operational constraints.’ - P. Palermo ‘Approaches to Generation Dispatch in Transmission Planning’ (2009) 135 CIGRE

²⁴⁹ The trading hub or power exchange is the heart of the electricity market. The power exchange’s members will consist of producers, retailers and traders as well as large end users. The exchange will trade a series of standard products in both volume and time, with the delivery location and other technical details relating to the trade set out in a trade master agreement. Each individual trade will in effect be a supplemental agreement to this trade master agreement. The market price is determined by supply and demand considerations, with both varying during the day, a different price is determined for each trading period (usually an hour, or in the UK half hour). The market price may vary somewhat between different market regions, depending on physical transmission limitations that sometimes occur and the generation mix within each region. Available at <https://corporate.vattenfall.com/about-energy/energy-markets/> accessed 22 April 2018

²⁵⁰ Case 120/78, *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein* (Cassis de Dijon) ECLI:EU:C:1979:42

²⁵¹ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80; Also Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

²⁵² Jukka Snell, ‘The Notion of Market Access: A Concept or a Slogan?’ (2010) 47(2) Common Market Law Review. 437; see also Eleanor Spaventa, ‘Leaving Keck behind? The free movement of goods after the rulings in *Commission v. Italy and Mickelsson and Roos*’ (2009) 6 (34) European Law Review; Catherine Barnard and Simon Deakin, ‘Market Access and Regulatory Competition’, Jean Monnet Working Paper 9/01. Available at: <http://www.jeanmonnetprogram.org/papers/01/012701.html> accessed 17 January 2017

²⁵³ Joined Cases C-56/64 and C-58/64 *Consten S.à.R.L. and Grundig-Verkaufs-GmbH v Commission* ECLI:EU:C:1966:41

²⁵⁴ Joined Cases C-264/01, C-306/01, C-354/01 and C-355/01 *AOK Bundesverband v Ichthyol-Gesellschaft Cordes Hermani* ECLI:EU:C:2004:150 – defined as ‘an agreement or decision on the part of buyers to fix the purchase price on a given market must be understood to have as its object to restrict competition, without the need, at that stage of the analysis, for any investigation of its competitive effects.’

²⁵⁵ Example energy cases - Case T-360/09 *E.ON Ruhrgas and E.ON v Commission* ECLI:EU:T:2012:332; Case T-370/09 *GDF Suez v Commission* ECLI:EU:T:2012:333; Case T-196/06 *Edison v Commission* ECLI:EU:T:2011:281; See also Mark Jephcott, *Law of Cartels* (Jordan Publishing, 2011)

²⁵⁶ Case C-53/92 *Hilti v Commission* ECLI:EU:C:1994:77

²⁵⁷ Case 56/65 *Société Technique Minière v Société Maschinenbau Ulm GmbH* ECLI:EU:C:1966:38

The EU has a general prohibition against the granting of state aid (Article 107 TFEU) as this is said to distort²⁵⁸ the internal market.²⁵⁹ The ever-growing importance of EU state aid law in the electricity field has been highlighted by recent investigations ranging from the financing of nuclear power stations²⁶⁰ to the support for renewable energy sources.²⁶¹

1.10 Fossil Fuel Subsidy

Energy subsidies are one policy instruments used by governments to attain economic, social and environmental objectives²⁶² taking many forms such as, (i) direct price subsidy, (ii) enhancing producer's revenues, or (iii) simply reducing costs for producers via tax or other exemptions.²⁶³

It is known that fossil fuels (coal and gas) receive subsidies globally and within the EU.²⁶⁴ These subsidies were estimated to be US\$ 5.3 trillion in 2015.²⁶⁵ These subsidies can be of equal importance in the development of renewable electricity facilities as the support schemes implemented in accordance with the EU's renewable energy regulatory framework.²⁶⁶ However, research is focused on the diagonal conflicts between the renewables regulatory framework and wider EU free trade principles and as such these subsidies are outside the scope of this research.

²⁵⁸ Miek Van der Wee (Head of Unit International Relations DG Competition), 'State Aid and the Distortion of Competition' 2011, 3 available at http://ec.europa.eu/competition/speeches/text/sp2011_17_en.pdf accessed 1 March 2018

²⁵⁹ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

²⁶⁰ European Commission, Decision of 18 December 2013 'State aid SA34947 (2013/C) (ex 2013/N)-United Kingdom, Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station', 269 OJ L/109/2015 See also Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439

²⁶¹ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851 ; See also Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060

²⁶² OECD Report 'Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative' [2010] Prepared for submission to the G-20 Summit Meeting Toronto (Canada), 26-27 June 2010 available at <https://www.oecd.org/env/45575666.pdf> accessed 20 October 2016

²⁶³ EEA 'Energy subsidies in the European Union: A brief overview' [2010] Technical Report 1/2004 available at https://www.eea.europa.eu/publications/technical_report_2004_1 accessed 20 October 2016

²⁶⁴ Jun Rentschler, Morgan Bazilian, 'Principles for Designing Effective Fossil Fuel Subsidy Reforms' (2017) 11(1) *Review of Environmental Economics and Policy* 135; See Also Marcella Nicolini, Massimo Tavoni, 'Are renewable energy subsidies effective? Evidence from Europe' (2017) 74(c) *Renewable and Sustainable Energy Reviews* 412; See Also Jun Rentschler, Morgan Bazilian, 'Reforming fossil fuel subsidies: drivers, barriers and the state of progress' (2016) 17(7) *Climate Policy* 891; See Also Simon Commander, 'A Guide to the Political Economy of Reforming Energy Subsidies' (2012) IZA Policy Paper No. 52 available at <http://ftp.iza.org/pp52.pdf> accessed 1 September 2018

²⁶⁵ David Coady, Ian Parry, Louis Sears and Baoping Shanga, 'How Large Are Global Fossil Fuel Subsidies?' (2017) 91 *World Development* 11

²⁶⁶ Monika Papież, Sławomir Śmiech and Katarzyna Frodyma, 'Determinants of renewable energy development in the EU countries. A 20-year perspective' (2018) 91 *Renewable and Sustainable Energy Reviews* 918; See Also Jean-Marc Burniaux and Jean Chateau, 'Greenhouse gases mitigation potential and economic efficiency of phasing-out fossil fuel subsidies' (2014) 140 *International Economics* 71; See Also Gabriela Mundaca, 'How much can CO2 emissions be reduced if fossil fuel subsidies are removed?' (2017) 64 *Energy Economics* 91

1.11 Thesis Structure

As stated above, this research project considers the nature of the diagonal conflict between the renewable energy regulatory framework and the EU's free trade principles - free movement, undistorted competition, other elements of state aid and the vertical conflict with the 'polluter pays' principle.

To introduce the day to day operation of the electricity market within the EU Annex 3 outlines the timeline of the market structure as well as a series of key concepts.

To address the research question, Chapter 2 lays out the scope of the renewable energy regulatory framework.²⁶⁷ The chapter commences by illustrating that the EU not only seeks to reduce carbon emissions and increase security of supply, but also seeks to implement the EU's external climate change commitments via the UNFCCC,²⁶⁸ the Kyoto Protocol²⁶⁹ and COP 21.²⁷⁰ Mention is also made of the post Kyoto 'euphoria'²⁷¹ which has aided the execution of current environmental commitments.

Chapter 3 considers how the CJEU has sought to ensure the implementation of environmental protection measures (via the renewables regulatory framework) whilst reconciling this against the EU's free trade principles.²⁷² The case law analysis of Chapter 3 shows the CJEU supports an EU regulatory structure based on nationally focussed renewables support schemes,²⁷³ granting member states a

²⁶⁷ Implemented via a series of Directives: Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading within the Community OJ L275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63; Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision); Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 (Industrial Emission Directive); Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1; Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

²⁶⁸ See http://unfccc.int/parties_and_observers/items/2704.php.

²⁶⁹ See http://unfccc.int/kyoto-protocol/status_of_ratification/items/2613.php.

²⁷⁰ UNFCCC (2015), 'Adoption of the Paris Agreement: Proposal by the President', Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (accessed 13 July 2016).

²⁷¹ Jorge Viñuales, Joanna Depledge, David Reiner and Emma Lees 'Climate policy after the Paris 2015 climate conference' (2017) 17(1) Climate Policy, 1, 7

²⁷² Example cases covering free movement, competition and state aid - Case C-379/98 *PreussenElektra AG v Schleswig AG*, ECLI:EU:C:2001:160 ; C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:U:C:2014:2192 ; Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037; Case C-492/14 *Essent Belgium NV v Vlaams Gewest* ECLI:EU:C:2016:732; Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie*, ECLI:EU:C:2013:85; Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060 ; Case C-275/13, *Elcogas SA v Administración del Estado & Iberdrola SA*, ECLI:EU:C:2014:2314; Case T-47/15 *Germany v Commission*, ECLI:EU:T:2016:281; Case C-393/92, *Gemeente Almelo v NV Energiebedrijf IJsselmij* ECLI:EU:C:1994:171

²⁷³ means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price

wide margin of discretion in regulating renewables (*lex specialis*).²⁷⁴ The chapter also provides an analysis of the market failures which bring about the need for revenue support for renewable generation across the EU.²⁷⁵

Chapter 4 considers, via empirical research, the views and adjustments used by market operators to overcome regulatory uncertainties. The chapter thus considers the importance to market operators of the conflicts outlined in Chapters 2 and 3. The chapter also considers the views of companies with high levels of coal fuelled generation capacity in their portfolio to a strict enforcement of the 'polluter pays' principle and the effect of the Industrial Emissions Directive²⁷⁶ on the operating hours of coal generation and electricity market prices.

The empirical research highlights the concern that market operators have with regards to retrospective changes in national renewable frameworks e.g. changes in feed-in tariff, dispatch priority and narrowing of the definition of renewable electricity.

Chapter 5 sets out the overall conclusions generated from the research. The chapter also makes several proposals for regulatory change to simplify the structure of the framework and reduce the conflicts. These proposals are likely to require legislative action at EU and member state level.

support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

²⁷⁴ Torben Spaak, 'Guidance and Constraint: The Action-Guiding Capacity of Theories of Legal Reasoning', (2007) 26 Law and Philosophy, 343

²⁷⁵ Carolyn Fischer and Louis Preonas, 'Combining Policies for Renewable Energy: Is the Whole Less than the Sum of its Parts?' (2010) 4 International Review of Environmental and Resource Economics 51, 83; See also Joyashree Roy, Duke Ghosh, Anupa Ghosh and Shyamasree Dasgupta, 'Fiscal Instruments: Crucial Role in Financing Low Carbon Transition in Energy Systems' (2013) 5 Current Opinion in Environmental Sustainability 261; See also Christoph Burger and Jens Weinmann, 'Germany's Decentralized Energy Revolution' (2014) Distributed Generation and its Implications for the Utility Industry 49, 53;

²⁷⁶ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

Chapter 2 – Renewables Regulatory Framework

2.1 Introduction

The European electricity industry is complex,²⁷⁷ composed of a multiplicity of companies with specialised functions such as generation, transmission and supply (See Annex 3). This organisational structure was brought about by the EU's liberalisation process whereby national monopolies were functionally separated to bring market practices to one of the EU's largest industries.²⁷⁸

The complexity of the industry's ownership structure is reflected in the complexity of the regulatory framework set out in a matrix of legal principles, Directives, Regulations and national laws.²⁷⁹

This chapter analyses the regulatory framework as the EU seeks to resolve the trilemma of reliability, sustainability and affordability.²⁸⁰ The research focuses on how the EU has sought to increase the sustainability (reducing carbon emissions) of the electricity generation sector and in so doing has created a series of legal conflicts between the regulatory framework and the EU's free trade principles.

The chapter initially considers issues surrounding rule conflict in, and between, international and EU law, looking at fragmentation²⁸¹ and illustrating that the issues outlined in this research are an example of this phenomenon in practice.

²⁷⁷ Rafael Leal-Arcas and Andrew Filis, 'Legal Aspects of the Promotion of Renewable Energy within the EU and in Relation to the EU's Obligation in the WTO' (2014) 3 Renewable Energy Law & Policy

²⁷⁸ EU Directive Electricity Liberalisation Directive (96/92/EC)

²⁷⁹ Rafael Leal-Arcas and Stephen Minas, 'Mapping the International and European Governance of Renewable Energy', (2016) 35(1) Yearbook of European Law, 621; Sybille Roehrkasten, *Global Governance on Renewable Energy: Contrasting the Ideas of the German and Brazilian Governments* (Springer, 2015); Marjan Peeters, 'Governing Towards Renewable Energy in the EU: Competences, Instruments & Procedures' (2014) 21(1) Maastricht Journal of European & Comparative Law, 39; Maria Kottari and Panagiotis Roumeliotis, 'Renewable energy governance: Challenges within a "puzzled" institutional map', in Evanthie Michalena, and Jeremy Maxwell Hills (eds), *Renewable Energy Governance: Complexities and Challenges* (Springer, 2013); Nicolas de Sadeleer, 'Environmental Governance & the Legal Basis Conundrum' (2012) 31(1) Yearbook of European Law, 373; Dieter Helm, 'The European framework for energy and climate policies' (2014) 64 Energy Policy 29; Tim Maxian Rusche, *EU Renewable Electricity Law and Policy: From National Targets to a Common Market* (Cambridge University Press, 2015); Volker Oschmann, 'Introduction to European Law on Renewable Energy Sources' in Leslie Parker, Jennifer Ronk, and Rachel Maxwell (eds), *From Debate to Design: Issues in Clean Energy and Climate Change Law and Policy* (Yale School of Forestry and Environmental Studies 2008); Angus Johnston, 'Recent Renewables Litigation in the UK: Some Interesting Cases' (2015) Oil Gas and Energy Law available at <https://www.ogel.org/article.asp?key=3547>; Andreas Goldthau and Nick Sitter, 'Soft power with a hard edge: EU policy tools and energy security' (2014) European Policy Brief available at <http://cris.unu.edu/sites/cris.unu.edu/files/GREEN%20Goldthau%20Sitter%20Policy%20Brief%2037.pdf>; Miranda A Schreurs and Yves Tiberghien, 'Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation' (2007) 7(4) Journal of Global Environmental Politics, 19

²⁸⁰ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

²⁸¹ 'The fragmentation of public international law is a long-observed phenomenon that demonstrates uneven normative and institutional development and evolution in inter-state relations. Separate legal norms and institutions have developed largely independently from one another, often instigated by non-identical groupings of states and in response to specific functional issues.' From Margrate Young, 'Fragmentation' Oxford Bibliographies available at <http://www.oxfordbibliographies.com/view/document/obo-9780199796953/obo-9780199796953-0113.xml> accessed 12 March 2019

The chapter then sets out the theoretical framework used for the analysis of the regulatory framework. An overview of the EU's external obligations via the UNFCCC,²⁸² the Kyoto Protocol²⁸³ and finally the COP 21²⁸⁴ global climate change agreement is given as these obligations have informed the form and content of the regulatory framework. To understand the process of development of the regulatory framework, the nature and duties of the three main EU regulatory institutions are considered – Commission, CJEU and ACER.

Most of the chapter analyses the Treaty articles (focusing on the TFEU) and the Directives associated with the regulatory framework. The chapter concludes by looking at the future via the EU's 2030²⁸⁵ and 2050²⁸⁶ energy road maps.

2.2 Fragmentation: EU and International Law

Fragmentation in international law²⁸⁷ is both a process and a result derived from a proliferation of specialised legal tribunals, each seeing itself as an autonomous judicial body²⁸⁸ and each using different methods of interpretation of legal instruments and norms.²⁸⁹ This proliferation led the president of the international court of justice to state that this practice could raise the risk of parties competing for courts (sometimes referred to as 'forum shopping') due to overlapping jurisdictions, thus jeopardising the unity of international law.²⁹⁰

The main causes of fragmentation are (i) the decentralised structure of international law which occurs as a result of the multiplicity of states and organisations involved in executing the legal instruments (treaties and other accords), (ii) the globalisation of legal issues (e.g. climate change, migration, armed conflict, access to natural resources) all resulting in specialised regulation and

²⁸² See http://unfccc.int/parties_and_observers/items/2704.php.

²⁸³ See http://unfccc.int/kyoto-protocol/status_of_ratification/items/2613.php.

²⁸⁴ UNFCCC (2015), 'Adoption of the Paris Agreement: Proposal by the President', Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> accessed 13 July 2016

²⁸⁵ COM(2016) 860 30 November 2016 'Clean Energy For All Europeans'; See Also SWD(2014) 15 final, 'A policy framework for climate and energy in the period from 2020 up to 2030'

²⁸⁶ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

²⁸⁷ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201; See also Martti Koskeniemi and Päivi Leino, 'Fragmentation of International Law? Postmodern Anxieties' (2002) 15 *Leiden Journal of International Law* ,553

²⁸⁸ Daryl Mundis, 'ICTY (Appeals Chamber): Prosecutor v. Delalić (Čelebići Case)' (2001) 40(3) *International Legal Materials*, 626

²⁸⁹ Anne Peters, 'The refinement of international law: From fragmentation to regime interaction and politicization' (2017) 15(3) *International Journal of Constitutional Law*, 671, 671

²⁹⁰ H.E. Judge Gilbert Guillaume, President of the International Court of Justice, Speech to the General Assembly of the United Nations (30 Oct. 2001), <http://www.icj-cij.org/files/press-releases/5/2995.pdf> accessed 10 March 2019; See Also Mario Prost and Paul Clark, 'Unity, Diversity and the Fragmentation of International Law: How Much Does the Multiplication of International Organizations Really Matter?' (2006) 5(2) *Chinese Journal of International Law*, 34

dispute resolution processes²⁹¹ (iii) furthering the agenda of ‘powerful states’ as fragmentation limits the influence of ‘weaker states’.²⁹² Fragmentation can also occur within international law due to a lack clear normative and institutional hierarchy.²⁹³

One of the outcomes of fragmentation in the context of renewable electricity is inter-institutional and legal conflicts between EU and international law.²⁹⁴

An example of this inter-institutional and legal conflict is the *Vattenfall*²⁹⁵ case where a conflict between investment and environmental protection was said to exist. The German regulator denied water and emission permits for a power plant project owed by a Swedish developer (Vattenfall) to comply (it stated) with commitments under the EU Water Framework Directive²⁹⁶ and the UNFCCC. These commitments conflicted with the state’s obligations under the Energy Charter Treaty²⁹⁷ to accord foreign investor’s fair and equitable treatment. Vattenfall requested arbitration, following which the permits were granted.

The EU is important in international legal terms, as it is a distinct jurisdiction of international law, an international organisation, and party to numerous international treaties.²⁹⁸ The EU, and particularly the CJEU, can be said to interpret the EU treaties as a kind of ‘constitutional charter’²⁹⁹ rather than as instruments of international law, reinforcing constitutionalist paradigm, as an example of the CJEU’s view of the autonomy of EU law (Section 1,2). The CJEU can therefore be seen to be self-contained and inward looking, referring to, and prioritising, its own legal instruments in its judgments. An example of this practice is *Kadi*,³⁰⁰ a classic fragmentation situation, resolved the conflict between certain EU legal obligations and those of the UN Charter by prioritising EU law over the UN Charter. This conclusion was reached by the CJEU despite Article 3(5) TEU stating that the EU

²⁹¹ Michael Zürn and Benjamin Faude, ‘Commentary: On Fragmentation, Differentiation and Coordination’ (2013) 13(3) Global Environmental Politics, 119, 125–126

²⁹² Eyal Benvenisti and George Downs, ‘The Empire’s New Clothes: Political Economy and the Fragmentation of International Law’ (2007) 60(2) Stanford Law Review 595

²⁹³ Martti Koskenniemi, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law’ [2006] International Law Commission

²⁹⁴ Fariborz Zelli, ‘The fragmentation of the global climate governance architecture’ (2011) 2 Climate Change, 255
²⁹⁵ *Vattenfall v Germany* International Center for Settlement of Investment Disputes Case No. Arb/09/06, 11 March 2011

²⁹⁶ EU Directive 2000/60/EC ‘a framework for Community action in the field of water policy’ OJ L 327/1

²⁹⁷ Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-Treaty-1994/energy-charter-Treaty>; For an introduction to the Energy Charter Treaty see Graham Coop and Bernhard Maier, ‘External Relations of EU Energy Regulation’ in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 66

²⁹⁸ Katja Ziegler, ‘The Relationship Between EU Law and International Law’, in D Patterson and A Soderston (eds) *A Companion to EU and International Law* (Wiley Blackwell, 2016), 42

²⁹⁹ Case C-294/83, *Parti écologiste “Les Verts” v European Parliament* ECLI:EU:C:1986:166, para 23

³⁰⁰ Joined Cases C-402 & C-415/05 *Yassin Abdullah Kadi and Al Barakaat International Foundation v Council and Commission* ECLI:EU:C:2008:461

will ensure ‘observance and the development of international law, including respect for the principles of the United Nations Charter’.

The CJEU has also forcefully confirmed the autonomy of EU Law in relation to international law³⁰¹ by stating that the interpretation of rights must be within the framework of EU law.³⁰² This approach has been stated to bring into being a ‘fortress Europe’.³⁰³

The Commission has also taken a highly constitutionalist approach arguing for the jurisdiction of EU law and insisting issues could only be determined in the context of EU law (examples from the field of EU energy law being *Electrabel*,³⁰⁴ *EDF International*³⁰⁵ and *Micula*).³⁰⁶ The Commission has also stated previously that should an award be made not on the basis of EU law this could be regarded as state aid and as such repayable.³⁰⁷ In April 2015, however, the Commission issued four cases related to changes made by the Czech Republic to its support scheme for the production of renewable energy.³⁰⁸ These cases were all based on the same treaties, namely the Energy Charter Treaty³⁰⁹ and a bilateral investment treaty between Germany and the Czech Republic. The Commission states within its submissions that EU law should be used, not because it is legally superior, but because of the *lex posterior* rule in both Articles 30 and 59 of the Vienna Convention of the Law of Treaties.

Hence it can be seen that the EU is increasingly important in an international law context.³¹⁰ It has the competence to conclude treaties and thus as an

³⁰¹ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

³⁰² Opinion C-2/13 ‘Accession of the European Union to the European Convention for the Protection of Human Rights and Fundamental Freedoms - Compatibility of the Draft Agreement With the EU and FEU Treaties’ ECLI:EU:C:2014:2454; See also Katja Ziegler, ‘Beyond Pluralism and Autonomy: Systemic Harmonization as a Paradigm for the Interaction of EU and International Law’ (2016) 35(1) Yearbook of European Law, 667

³⁰³ Adam Lazowsky and Ramses Wessel, ‘When Caveats Turn Into Locks: Opinion 2/13 on Accession of the European Union to the ECHR’ (2015) 16(1) German Law Journal, 179, 187

³⁰⁴ *Electrabel SA v Republic of Hungary* International Center for Settlement of Investment Disputes Case No. ARB/07/19, Decision on Jurisdiction, Applicable Law and Liability, 30 November 2012, paras 27-34

³⁰⁵ *EDE International v Hungary* UNCITRAL, PCA, Award of 4 December 2014 available at <http://www.iareporter.com/articles/investigation-in-recent-briefs-europeancommission-casts-doubt-on-application-of-energy-charter-treaty-to-any-intra-eudispute/> accessed 10 March 2019

³⁰⁶ *Ioan Micula v Romania*, International Center for Settlement of Investment Disputes Award of the Arbitral Tribunal, Case No. ARB/05/20, 11 December 2013

³⁰⁷ Commission Decision (EU) 2015/1470 of 30 March 2015, State Aid SA.38517 (2014/C) implemented by Romania — Arbitral award *Micula v Romania* OJ L 232/43, para. 2 [Letter from the Commission].

³⁰⁸ *Voltaic Network GmbH v Czech Republic*, PCA Case No. 2014-20, registered 8 May 2013; *L C.W Europe Investments Limited v Czech Republic*, PCA Case No. 2014-22, registered 8 May 2013; *Photovoltaic KnopfBetriebs-GmbH v Czech Republic*, PCA, registered 8 May 2013; *WA Investments Europa Nova Limited v Czech Republic*, PCA Case No. 2014-19, registered 8 May 2013

³⁰⁹ Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-Treaty-1994/energy-charter-Treaty>; For an introduction to the Energy Charter Treaty see Graham Coop and Bernhard Maier, ‘External Relations of EU Energy Regulation’ in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 66

³¹⁰ Ernst-Ulrich Petersmann ‘International Activities of the European Union and Sovereignty of Member States’ in Enzo Cannizzaro (ed), *The European Union as an Actor in International Relations* (Kluwer Law International, 2002), 321; See Also Koen Lenaerts and Eddy de Smijter, ‘The European Union as an Actor in International Law’ (1999) 19(1) Yearbook of European Law, 95

organisation contributes to the shaping of international law.³¹¹ The EU treaties do not contain explicit rules about the status of international law within EU law. However, Article 216(2) TFEU states that treaties are binding on EU institutions and member states, the Article referring to the binding effect internationally rather than within EU law.

The fragmentation between EU and the norms of international law should be noted when consideration is given to the norms and protocols used to resolve the conflicts which are at the heart of this research.

EU free trade principles and environmental law emerge from different policy areas and this divergence of origins may affect the relevant rules of interpretation.³¹² While such 'policy-divergence' does not lead to automatic incompatibility between obligations, they may nevertheless also be relevant for fragmentation.³¹³ The norms used for resolution of these conflicts are set out in Section 2.3 below.

2.3 Legal Conflict Resolution

In considering methods for resolving diagonal and other conflicts within EU and international law³¹⁴ it should be noted that there are several different actors that will become involved in the resolution of these conflicts. At their most general these actors can be categorised as legislators or judicial bodies. These different actors may use different techniques for resolving conflicts. Disputes between sovereign states tend to be settled at the political level,³¹⁵ however, when states execute a treaty between themselves they invariably agree to dispute processes which are managed by a specific court or tribunal. The use of political processes to resolve disputes between states is out with the scope of this research, thus the legal conflict and dispute resolution methods analysed below focus of those generally used by judicial bodies.

³¹¹ Sebastian Oberthür and Lisanne Groen, 'Explaining goal achievement in international negotiations: the EU and the Paris Agreement on climate change' (2018) 25(5) *Journal of European Public Policy*, 708

³¹² Gareth Davies, 'Interpretative Pluralism within EU Law' in Gareth Davies and Matej Avbelj (eds) *Research Handbook on Legal Pluralism and EU Law* (Elgar, 2018)

³¹³ Rüdiger Wolfrum and Nele Matz *Conflicts in International Environmental Law* (Springer, 2003), 6-13

³¹⁴ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

³¹⁵ Gerhard von Glahn and James Taulbee *Law Among Nations: An Introduction to Public International Law* (Routledge, 2017)

Uncertainty within and between legal systems is an issue requiring methods of judicial interpretation that impose constraint on the interpretive process as in the absence of such constraint the judicial process would be little more than arbitrary.³¹⁶

In seeking a system to resolve legal conflicts consideration should be given to the positivist³¹⁷ and the natural law³¹⁸ view of the legal framework.

The positivist view of law sees it as a normative set of rules³¹⁹ and is a matter of what has been posited (ordered, decided, practiced, tolerated, etc.); in other words, a social construction. Human society has a social order, a means of regulating behaviour, deterring anti-social behaviour, and resolving disputes. The positivist theory separates the existence of law as a normative set of rules from moral ideals.³²⁰

Whereas, natural law theory³²¹ sees the law as a branch of political morality³²² or natural law. Accordingly, natural law theorists state that the driving feature of law is not as a source-based system, but in its capacity to advance the common good³²³ - such as climate change mitigation. Additionally, it is said that judges in exercising moral judgment in the penumbra of legal rules in effect 'revise our concept of what a legal rule is'.³²⁴

Turning to the more day to day judicial conflict resolution techniques which relate to interpretation of the text, context, object (or purpose) and preparatory works of the treaty or legal instrument.³²⁵ There are also protocols such as *lex specialis*,³²⁶ *lex superior*³²⁷ and *lex posterior*³²⁸.³²⁹ In addition to these protocols there is the

³¹⁶ Gunnar Beck, 'The Macro Level: The Structural Impact of General International Law on EU Law The Court of Justice of the EU and the Vienna Convention on the Law of Treaties' (2016) 35(1) Yearbook of European Law, 484

³¹⁷ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983)

³¹⁸ Ronald Dworkin *Taking Rights Seriously* (Harvard University Press, 1978)

³¹⁹ Hans Kelsen *General Theory of Law and State* (Russell and Russell, 1945)

³²⁰ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983)

³²¹ Ronald Dworkin *Taking Rights Seriously* (Harvard University Press, 1978)

³²² Lon Fuller, 'Positivism and Fidelity to Law: a Reply to Professor Hart' (1958) 71 Harvard Law Review, 630; See also Lon Fuller *The Morality of Law* (Yale University Press, 1969)

³²³ Lon Fuller, 'Positivism and Fidelity to Law: a Reply to Professor Hart' (1958) 71 Harvard Law Review, 630; See also Lon Fuller *The Morality of Law* (Yale University Press, 1969)

³²⁴ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983), 72

³²⁵ Richard Gardiner *Treaty Interpretation* (Oxford University Press, 2008); See Also Isabelle van Damme *Treaty Interpretation by the WTO Appellate Body* (Oxford University Press, 2007)

³²⁶ *Lex Specialis* is a method of resolving legal conflicts where specialist legal provisions take precedence over more general provisions

³²⁷ *Lex Superior* is a means of declaring a legal hierarchy between legal instruments such that superior laws are deemed to take precedence over others -

³²⁸ *Lex Posterior* means that more recent legal instruments have precedence over older instruments

³²⁹ Ralf Michaels and Joost Pauwelyn, 'Conflict of Norms or Conflict of Laws?: Different Techniques in the Fragmentation of International Law' (2012) 22(3) Duke Journal of Comparative & International Law, 349

process set out in the Vienna Convention on the Law of Treaties³³⁰ (VCLT) – each discussed in turn below.

Whilst treaty interpretation in international law is governed by the rules of the Vienna Convention on the Law of Treaties³³¹ (VCLT) uncertainty is still seen to continue and thus judicial discretion is required to ensure determination of issues brought before the various courts can be achieved.

The VCLT sets out in Articles 31 and 32 general rules of interpretation. The VCLT rules should apply in all international courts or tribunals. The first interpretive rule³³² is that treaty drafting is interpreted in ‘good faith’, within the ‘ordinary meaning’ of the ‘terms’ of the treaty, in ‘context’, and considering the treaty’s ‘object and purpose’. The VCLT’s second general interpretative rule³³³ is that the ‘preparatory work of the treaty and the circumstances of its conclusion’ are only secondary sources in relation to interpretation.

The VCLT states (unless there is a specific article in the treaties to the contrary or the parties to the treaties have developed definitive interpretive practice),³³⁴ that (i) it cannot be applied retroactively,³³⁵ (ii) the most recent treaty prevails in the event of a conflict,³³⁶ unless the most recent treaty conflicts with a ‘*peremptory norm of general international law*’ in which case it is void,³³⁷ (classifying an event or practice as a ‘peremptory norm’ has not been universally successful – potential examples would be the abuse of children or vulnerable adults and human trafficking).³³⁸ Therefore the *lex posterior* principle in Article 30 seems to be the most readily usable element of the Vienna Convention. However, this concept does not seem to have been applied by the EU in the context of the diagonal conflict between the renewable electricity regulatory framework and the TFEU.

³³⁰ Vienna Convention on the law of treaties (with annex). Concluded at Vienna on 23 May 1969. Authentic texts: English, French, Chinese, Russian, and Spanish. 1155 U.N.T.S. 331, 8 I.L.M. 679, entered into force Jan. 27, 1980 - available at <https://treaties.un.org/doc/publication/unts/volume%201155/volume-1155-i-18232-english.pdf> accessed 16 September 2017

³³¹ Vienna Convention on the law of treaties (with annex). Concluded at Vienna on 23 May 1969. Authentic texts: English, French, Chinese, Russian, and Spanish. 1155 U.N.T.S. 331, 8 I.L.M. 679, entered into force Jan. 27, 1980 - available at <https://treaties.un.org/doc/publication/unts/volume%201155/volume-1155-i-18232-english.pdf> accessed 16 September 2017

³³² Vienna Convention on the law of treaties (with annex). Concluded at Vienna on 23 May 1969. Authentic texts: English, French, Chinese, Russian, and Spanish. 1155 U.N.T.S. 331, 8 I.L.M. 679, entered into force Jan. 27, 1980 - available at <https://treaties.un.org/doc/publication/unts/volume%201155/volume-1155-i-18232-english.pdf> accessed 16 September 2017

Article 31

³³³ Ibid Article 32

³³⁴ Ibid Article 31(3)

³³⁵ Ibid Article 28

³³⁶ Ibid Article 30(3)

³³⁷ Ibid Article 53

³³⁸ Janelle Diller, ‘Economic, Social and Cultural Human Rights: The Journey towards Peremptory Norms in International Law’ (2018) 36(1) Nordic Journal of Human Rights, 19; See Also Kamrul Hossain, ‘The Concept of Jus Cogens and the Obligation Under The U.N. Charter’ (2005) 3(1) Santa Clara Journal of International Law, 72

Despite EU member states being signatory to the VCLT, the EU has taken a *lex superior* approach to its legal instruments over national laws or other treaties executed by member states (this approach being derived from Article 351 TFEU). The CJEU confirmed this *lex superior* approach in cases such as *Costa v ENEL*, *Van Gen den Loos* and others³³⁹ and goes to the heart of the consideration of EU law as autonomous.

Additionally, despite its growing position as a party to international treaties, the EU has demonstrated itself opposed to the use of alternative dispute resolution fora (for example *Mox Plant*)³⁴⁰ and therefore any process to reduce fragmentation would have to reconsider this position.

The CJEU has applied international law in three ways

- Direct Effect of treaties and other elements of international law³⁴¹
- Consistent interpretation (although the application of such principles may be limited –see *Kadi*)³⁴²
- Substantive borrowing, where the EU uses international law in a non-structured way to fill gaps in EU law³⁴³

The CJEU has held, however, that in applying common principles of international law any review would be limited to ‘*manifest errors of assessment...as a principle of customary international law does not have the same degree of precision as a provision of an international agreement*’.³⁴⁴

Furthermore, Article 351 TFEU allows for international obligations predating a member state’s accession to the EU to be maintained, provided the member state eliminates incompatibilities. This obligation to eliminate incompatibilities effectively requires member states now to include a ‘terminate for incompatibility clause’³⁴⁵ into

³³⁹ Case 6/64, *Flaminio Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66; See also Case 26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen*, ECLI:EU:C:1963:1 ; Case C-266/16 *Western Sahara Campaign UK v Commissioners for Her Majesty’s Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs* ECLI:EU:C:2018:118; Case C-284/16 *Slowakische Republik v Achmea BV* ECLI:EU:C:2018:158

³⁴⁰ Case C-459/03 *Commission v Ireland* (MOX plant) ECLI:EU:C:2006:345; See also Nikos Lavranos, ‘The Epilogue in the Mox Plant Dispute: An End Without Findings’ (2009) *European Energy and Environmental Law Review*

³⁴¹ Case C-181/73 *Haegeman v Belgium* ECLI:EU:C:1974:41, para 5; Case 104/81 *Kupferberg v Hauptzollamt Mainz* ECLI:EU:C:1982:362, para 13; See Also Pieter Kuijper, ‘Customary International Law, Decisions of International Organisations and Other Techniques for Ensuring Respect for International Legal Rules in Jan Wouters, André Nollkaemper and Erika de Wet (eds.) *European Community Law* in The Europeanisation of International Law: The Status of International Law in the EU and its Member States, (Asser Press, 2008), 87

³⁴² Joined Cases 402 & 415/05 *Yassin Abdullah Kadi and Al Barakaat International Foundation v Council and Commission of EU* ECLI:EU:C:2008:461

³⁴³ EU human rights norms were developed in this way by the Court; See Andrew Williams *EU Human Rights Policies. A Study in Irony* (Oxford University Press, 2004), 145–57

³⁴⁴ Case C-366/10 *Air Transport Association of America v Secretary of State for Energy and Climate Change* ECLI:EU:C:2011:864; See Also Eileen Denza, ‘International Aviation and the EU Carbon Trading Scheme: Comment on the Air Transport Association of America Case’ (2012) 37 *European Law Review*, 314, 324

³⁴⁵ Case C-205/06 *Commission v Austria* ECLI:EU:C:2009:118, para 36; See also Case C-249/06 *Commission v Sweden* ECLI:EU:C:2009:119; Case C-118/07 *Commission v Finland* ECLI:EU:C:2009:715

their existing treaties as well as the more traditional renegotiate, suspend or terminate incompatible obligations.³⁴⁶

In seeking a compatible system as to the rule of law the CJEU has stated that if the EU is party to an international treaty, including a mixed agreement, EU secondary legislation will be interpreted ‘as far as possible’ in the light of the international obligations of the EU,³⁴⁷ thus placing international law in a space between EU primary law (Treaty) and secondary law.

Where, however, international law supports the enforcement of EU law (as is the case with direct effect of trade and association agreements), the CJEU has adopted, selectively, a more open approach.³⁴⁸

Moreover, in relation to renewable electricity regulation, the EU and CJEU have implemented a *lex specialis*³⁴⁹ (the special status outlined above)³⁵⁰ approach to resolving the conflict between the renewable electricity regulatory framework and the provisions of the TFEU, the method being confirmed in *Parliament v Council*.³⁵¹ Thus the CJEU seems to be following Dworkin in that there is a 21st century higher objective than the EU’s free trade principles and that being climate change abatement.

Therefore in considering the conflicts outlined in this Chapter 2 and the case law analysis in Chapter 3 this should be done in the light of concerns with regards to the fragmentation of international law, the proliferation of international tribunals and instances when international law lacks a clear normative and institutional hierarchy.³⁵² The problem is how EU institutions such as the Commission and the CJEU use the international law concepts outlined to further new interests such as the abatement of climate change.

Within international law, courts can be seen to undertake judicial interpretation primarily using a text-based approach which minimises judicial discretion. However, the CJEU has traditionally used a teleological³⁵³ and policy-

³⁴⁶ Case C-473/93 *Commission v Luxembourg* ECLI:EU:C:1996:263; Case C-62/98 *Commission v Portugal* ECLI:EU:C:2000:358

³⁴⁷ Case C-53/96 *Hermès International v FHT Marketing Choice BV* ECLI:EU:C:1998:292, para 28; Case C-61/94 *Commission v Germany* ECLI:EU:C:1996:313, para 52

³⁴⁸ Katja Ziegler, ‘The Relationship Between EU Law and International Law’, in D Patterson and A Soderston (eds) *A Companion to EU and International Law* (Wiley Blackwell, 2016), 16

³⁴⁹ *Lex specialis* is a method of resolving legal conflicts where specialist legal provisions take precedence over more general provisions

³⁵⁰ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80

³⁵¹ Case C-490/10 *Parliament v Council* ECLI:EU:C:2012:525 para 65 to 67

³⁵² Martti Koskeniemi, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law’ [2006] *International Law Commission*

³⁵³ A teleological Court would be activist in approach, fill gaps in the rules beyond necessarily simple linguistic interpretation – the CJEU being an example – See Joost Pauwelyn and Manfred Elsig, ‘The Politics of Treaty Interpretation: Variations and Explanations across International Tribunals’, in Jeffrey Dunoff and Mark Pollack

based approach which widens judicial discretion.³⁵⁴ The CJEU is said to interpret the treaties a living and not static instruments,³⁵⁵ leading to a cumulative or variable approach.³⁵⁶ The classic constitutional cases³⁵⁷ clearly show the CJEU has always simply ‘filled the gaps’ in a manner to enhance supremacy of EU law and the manage the competence of the EU and its institutions. The Euro Crisis cases continuing this theme with the separation of monetary and economic policy being blurred.³⁵⁸ The free movement of people, however, has seen narrower (more literal) interpretations of EU law recently, allowing more national discretion.³⁵⁹ Thus the CJEU can be said to be undertaking judicial interpretation in the light of current political or economic need.

The CJEU has held that its interpretative norm would be to find against any interpretation that would ‘lead to a result contrary both to the spirit of the Treaty [...] and to its system’.³⁶⁰ Therefore it would be reasonable to assume that the provisions of the TFEU would prevail in a *lex superior* approach, however, as will be shown the CJEU consistently applies a *lex specialis* approach to cases related to renewable electricity.

The CJEU summarising its approach as

in interpreting a provision of [EU] law it is necessary to consider not only its wording, but also the context in which it occurs and the objects of the rules of which it is part.³⁶¹

The analysis set out in Chapters 2 and 3 demonstrates the *lex specialis* approach has been used consistently in relation to renewable electricity. This approach allows the CJEU to resolve the diagonal conflict between the renewable electricity regulatory framework and the EU’s free trade principles by simply prioritising the renewables framework. However, the consistent application of this legal conflict

(eds) *Interdisciplinary Perspectives on International Law and International Relations The State of the Art* (Cambridge University Press, 2012), 445

³⁵⁴ Koen Lenaerts and José Gutiérrez-Fons, ‘To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice’ [2013] EUI Working Paper AEL 2013/9; See also Ellen Vos, ‘Making Informal International Law Accountable: Lessons from the EU’ in Joost Pauwelyn, Ramses Wessel and Jan Wouters (eds) *Informal Law Making* (Oxford University Press, 2012)

³⁵⁵ Gunnar Beck *The Legal Reasoning of the Court of Justice of the EU* (Hart Publishing, 2013), 287

³⁵⁶ Violeta Moreno-Lax, ‘Systematising Systemic Integration: “War Refugees”, Regime Relations, and a Proposal for a Cumulative Approach to International Commitments’ (2014) 12 Journal of International Criminal Justice, 907, analysing the interpretative methodology of the CJEU in Case C-285/12 *Diakite* ECLI:EU:C:2014:39 and building on Article 31(3)(c) VCLT; using ‘cumulative’ to mean the outcome of the interpretative processes in cases of concurrent obligations

³⁵⁷ Case C-6/64, *Flaminio Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66; See also Case C-26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen*, ECLI:EU:C:1963:1; Case C-11/70 *Internationale Handelsgesellschaft mbH v Einfuhr- und Vorratsstelle für Getreide und Futtermittel*; ECLI:EU:C:1970:114 ; Case C-4/73 *J. Nold, Kohlen-und Baustoffgroßhandlung v Ruhrkohle Aktiengesellschaft* ECLI:EU:C:1975:114 Case C-6/90 *Andrea Francovich and Danila Bonifazi and others v Italian Republic* ECLI:EU:C:1991:428

³⁵⁸ For example see 8 Case C-62/14 *Gauweiler and Others* ECLI:EU:C:2015:7

³⁵⁹ Daniel Carter and Moritz Jesse, ‘The “Dano Evolution”: Assessing Legal Integration and Access to Social Benefits for EU Citizens’ (2018) 3(3) *European Papers* , 1179

³⁶⁰ Case C-294/83 *Les Verts v Parliament* ECLI:EU:C:1986:166, para 25

³⁶¹ Case C-292/82 *Merck v Hauptzollamt Hamburg-Jonas* ECLI:EU:C:1983:335, para 12

resolution method simply reinforces the member state focused support schemes rather than incentivising the EU and its member states to find a harmonised solution. With such a solution more likely to facilitate the development of renewable electricity facilities where wind and solar resources are plentiful, rather than perpetuating a C&C target-based system devoid of economic efficiency. The empirical research also reported the Developer Operators to be concerned that the *lex specialis* approach could be over turned in a paradigm shift undermining the economics of the whole renewable sector.

2.4 Theoretical Research Framework

In analysing the EU Treaty Articles and Directives forming the renewable electricity regulatory framework two criteria are used, (i) the competence³⁶² of the EU institutions in relation to the Treaty Article or Directive and (ii) whether the Article or Directive is a ‘command and control’³⁶³ or market type.

The EU is granted competence to develop, undertake and control activities in specified areas by the member states via the terms of the Treaty (the principle of conferral).³⁶⁴ As competence not conferred on the EU is retained by the member states, it is imperative to define the competence holder in relation to an EU objective or policy area, as this determines who has operational control over a particular field. Lastly it being known that when a measure involves the competence granted to the EU’s institutions, such a measure is required to have a basis in the Treaty³⁶⁵ and be subject to judicial review.³⁶⁶

³⁶² Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, ‘Competences in EU energy policy’ in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

³⁶³ Command and Control Regulation being ‘the direct regulation of an activity by legislation that states what is permitted’ - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío ‘Preventive Command and Control Regulation: A Case Analysis’ (2016) 99(8) *Journal of Sustainability*

³⁶⁴ Conferral is laid down in Article 13(2) TFEU (Previously Art 5 TEU). The institutions of the EU act only within the limits of the powers (competences) that EU member states have conferred upon them via the Treaties. These competences are defined in Articles 2–6 TFEU. Competences not conferred on the EU Institutions by the Treaties remain with EU member states. While the principle of conferral governs the limits to EU competences, the use of those competences is governed by the principles of subsidiarity and proportionality: See Olivier Beaud ‘The Allocation of Competences in a Federation’ in Loïc Azoulay (ed) *The Question of Competence in the European Union* (Oxford University Press, 2014); Also Inge Govaere ‘To Give or to Grab: The Principle of Full, Crippled and Split Conferral of Powers Post-Lisbon’ (2016) 4 *College of Europe Research Papers in Law*

³⁶⁵ Case C-91/05 *Commission v Council* ECLI:EU:C:2008:288

³⁶⁶ Case C-295/90 *Parliament v Council* ECLI:EU:C:1992:294

Thus, to analyse the diagonal conflict between the renewable energy regulatory framework and the Treaty, competence is considered a key criterion. The analysis framework seeks to understand if the extent of the conflict between an element of the regulatory framework and the Treaty is correlated to the holder of the competence or if the nature, exclusive or shared, of the competence has a bearing on the number of conflicts found.

Specifically considering the renewable energy regulatory framework the TFEU sets out three types of competences – exclusive to the EU, exclusive to the member states or shared³⁶⁷ between the EU and the member states. The Directives within the renewable electricity regulatory framework are a mixture of EU exclusive and shared competence types.

Additionally, the status of the Treaty Article or Directive as ‘command and control’ (C&C) or one which employs a market-based solution, is also considered.

Command and Control (C&C) Regulation can be defined as ‘*the direct regulation of an activity by legislation that states what is permitted*’.³⁶⁸ The ‘command’ element is signified by the legal enforcement of environmental standards/targets by a governing authority, with ‘control’ signifying the sanctions element for non-compliance.³⁶⁹

An example of such a regulatory style in the renewables regulatory framework would be the imposition of permitted levels of emissions and requiring strict compliance with those levels (e.g. Effort Sharing Decision).³⁷⁰ This type of regulatory style has the positive of setting fixed standards or compliance criteria,³⁷¹ with the ability to speedily enforce compliance by regulatory bodies or courts.³⁷² The main criticisms are (i) ‘inefficiency’:³⁷³ with the cost of compliance for some market operators³⁷⁴ potentially being considerably higher than for others, and (ii)

³⁶⁷ ‘Shared competence’ means that both the EU and its member states may adopt legally binding acts in the area concerned. However, the member states can do so only where the EU has not exercised its competence or has explicitly ceased to do so. Article 4 TFEU - <http://ec.europa.eu/citizens-initiative/public/competences/faq#q3>

³⁶⁸ Command and Control Regulation being ‘the direct regulation of an activity by legislation that states what is permitted’ - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío ‘Preventive Command and Control Regulation: A Case Analysis’ (2016) 99(8) *Journal of Sustainability*

³⁶⁹ Robert Baldwin, Martin Cave and Martin Lodge *Understanding Regulation: Theory, Strategy and Practice* (2nd ed. Oxford University Press, 2011)

³⁷⁰ Council Decision No 406/2009/EC 23 April 2009 ‘Reduction in carbon emissions to meet the Community’s carbon emission reduction commitments up to 2020’ (Effort Sharing Decision)

³⁷¹ Olaf Dilling, ‘From Compliance to Rulemaking: How Global Corporate Norms Emerge from Interplay with States and Stakeholders’ (2012) 13 *German Law Journal*, 381, 404

³⁷² Robert Baldwin, Martin Cave and Martin Lodge *Understanding Regulation: Theory, Strategy and Practice* (2nd ed. Oxford University Press, 2011)

³⁷³ David Driesen, Robert Adler and Kirstin Engel *Environmental Law: Conceptual and Pragmatic Approach* (Aspen, 2011), 267

³⁷⁴ Robert Stavins ‘Experience with Market-Based Environmental Policy Instruments’ in Karl-Göran Mäler and Jeffrey Vincent (eds) *Handbook of Environmental Economics* (Elsevier Science, 2003)

compliance being seen as the limit of the requirement irrespective of what could actually be achieved.³⁷⁵

In contrast a market-based regulatory style uses 'market forces',³⁷⁶ price discovery,³⁷⁷ and other economic instruments to provide incentives for polluters to reduce or eliminate negative environmental externalities.³⁷⁸ The common processes used are either progressive taxation or trading mechanisms where a property right is created³⁷⁹ and then, via market processes, a 'price' is placed on pollution so that market participants are able to rank investments against the cost of non-compliance (for example the EU-ETS creates a property right in emissions via the allowances and facilitates the trading of those allowances).³⁸⁰ It has been stated that market-based solutions allow any desired level of emissions to be realised at the lowest overall cost to society, by providing reductions at the lowest cost.³⁸¹

Market-based regulations which do not prescribe specific technologies achieve compliance at the lowest cost, as all undertakings do not reduce emissions by the same amount but reduce emission in accordance only with economic justification. This approach allows greater flexibility in the abatement of emissions.

In developing the renewables regulatory framework the EU has declared a departure from a 'command and control'³⁸² approach to one of '*shared responsibility between various actors: government, industry and the public*'.³⁸³ This has been nuanced to be '*a more inclusive approach including more specific targets and an increased use of market-based measures*'.³⁸⁴ The need to move from C&C to market

³⁷⁵ Neil Gunningham and Darren Sinclair *Leaders and Laggards: Next Generation Environmental Regulation* (Greenleaf Publishing, 2002)

³⁷⁶ Robert Stavins 'Experience with Market-Based Environmental Policy Instruments' in Karl-Göran Mäler and Jeffrey Vincent (eds) *Handbook of Environmental Economics* (Elsevier Science, 2003), 358

³⁷⁷ Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHG> accessed 30 March 2018

³⁷⁸ Leigh Raymond *Private Rights in Public Resources Equity and Property Allocation in Market-Based Environmental Policy* (Routledge, 2014)

³⁷⁹ Santiago Moreno-Bromberg and Luca Taschini 'Pollution permits, strategic trading and dynamic technology adoption' [2011] Grantham Research Institute on Climate Change and the Environment Working Paper No. 45

³⁸⁰ Carolyn Fischer 'Technical innovation and design choices for emissions trading and other climate policies, in: Brend Hansjürgens (Ed) *Emissions Trading for Climate Policy - US and European Perspectives* (Cambridge University Press, 2005), 40

³⁸¹ Robert Stavins 'Experience with Market-Based Environmental Policy Instruments' in Karl-Göran Mäler and Jeffrey Vincent (eds) *Handbook of Environmental Economics* (Elsevier Science, 2003), 359; see also Patricia Birnie, Alan Boyle, and Catherine Redgwell, *International Law and the Environment* (3rd Ed, Oxford University Press, 2009); David Driesen, 'Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Change Convention' (1998) 26(1) Boston College Environmental Affairs Law Review

³⁸² Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) Journal of Sustainability

³⁸³ EU Comm 'Fifth European Community Environment Programme: Towards Sustainability' available at <<http://europa.eu/scadplus/leg/en/lvb/128062.htm>>

³⁸⁴ EU Comm 'Sixth Environment Action Programme, Environment 2010: Our future, Our Choice', available at <<http://Europa.eu.int/comm/environment/newprg>>

based regulatory styles emerged as a theme from the Developer Operators respondents during the empirical research phase.

The table below sets out the analysis pairs of competence³⁸⁵ and C&C/market; Exclusive EU Competence and Market, Exclusive EU Competence and C&C, Shared Competence and Market and finally Shared Competence and C&C.

This analysis framework can also be correlated to the trilemma criteria of reliability, sustainability and affordability,³⁸⁶ with the C&C Directive seen to be driving for the reliable achievement of the EU's sustainability goals, whereas market-based Directives are seen to seek lowest cost solutions, with achieving the goal being left to the market.

The Directives are divided in this manner to highlight the difference in the number and areas of conflict between the Directives and the EU's free trade principles. The assignment between exclusive and shared competence is undertaken via a combination of declaration of the competence in the Treaty (TEU and or TFEU) or by the CJEU.

Exclusive EU Competence + Market	Exclusive EU Competence + C&C
Emissions Trading Directive ³⁸⁷	Energy Efficiency Directive ³⁸⁸ Industrial Emissions Directive ³⁸⁹ Effort Sharing Decision ³⁹⁰ Carbon Capture & Storage Directive ³⁹¹
Shared Competence + Market	Shared Competence + C&C
Electricity Market Directive ³⁹²	Renewable Energy Directive ³⁹³

³⁸⁵ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

³⁸⁶ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

³⁸⁷ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

³⁸⁸ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

³⁸⁹ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

³⁹⁰ Commission Decision No 406/2009/EC 23 April 2009 Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision) OJ L 40/136

³⁹¹ Council Directive 2009/31/EC 23 April 2009 on the geological storage of carbon dioxide OJ L140/114

³⁹² Council Directive 2009/72/EC 13 July 2009 Concerning common rules for the internal market in electricity OJ L 211/55 (Electricity Markets Directive) available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0072&from=en>

³⁹³ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

It is acknowledged that the full renewables regulatory framework also contains Directives related to bio-fuels in the form of the Bio-fuels Directive³⁹⁴ and Fuel Quality Directive;³⁹⁵ however, these are outside the scope of this research.

2.5 UN Framework Convention on Climate Change (UNFCCC), Kyoto Protocol and COP 21 Paris Global Climate Change Agreement

To illustrate that the EU's carbon emissions reduction framework is not enacted in isolation the wider international climate change abatement programme is set out below.

In 1988, the Intergovernmental Panel on Climate Change (IPCC) was established to provide scientific information on climate change and assist with the formulation of response strategies to climate change.³⁹⁶ The IPCC in its 1990 first assessment report stated that the greenhouse effect³⁹⁷ was real, increasing and caused by human activity.³⁹⁸

Based on the successful implementation of a ban on the use of chlorofluorocarbons (CFC's)³⁹⁹ signatories to the UNFCCC⁴⁰⁰ sought in the same way global undertakings⁴⁰¹ related to greenhouse gases⁴⁰² and international agreement to the Kyoto Protocol⁴⁰³ However, certain countries failed to ratify the

³⁹⁴ EU Directive (2003/30/EC) 8 May 2003 'The promotion of the use of bio-fuels or other renewable fuels for transport' OJ L 123/42

³⁹⁵ Council Directive 98/07/EC 23 April 2009 The specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce carbon emissions (Fuel Quality Directive) OJ L140/88

³⁹⁶ Preface to The Intergovernmental Panel on Climate Change 'Report Prepared for IPCC by Working Group 1' Intergovernmental Panel on Climate Change (IPCC) -; Also known as John Houghton, Gareth Jenkins and J Ephraums (Eds.), *Climate Change: The IPCC Scientific Assessment*, (Cambridge University Press, 1990), available www.ipcc.ch/ipcreports/far/wg_i/ipcc_far_wg_i_full_report.pdf accessed 10 September 2015

³⁹⁷ Gases such as water vapour, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride, that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, prevent long-wave radiant energy from leaving the earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface. definition contained in Dag Klackenberg, Christian Egenhofer and Kyriakos Gialoglou 'Rethinking the EU Regulatory Strategy for the Internal Energy Market' (2004) Task Force Report No 52, Centre for European Policy Studies; See Also Catherine Redgwell, 'International Regulation of Energy Activities' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

³⁹⁸ The Intergovernmental Panel on Climate Change 'Report Prepared for IPCC by Working Group 1' Intergovernmental Panel on Climate Change (IPCC) -; Also known as John Houghton, Gareth Jenkins, J Ephraums (Eds.), *Climate Change: The IPCC Scientific Assessment*, (Cambridge University Press, 1990), pXI available www.ipcc.ch/ipcreports/far/wg_i/ipcc_far_wg_i_full_report.pdf accessed 10 September 2015; See Also Spencer Weart *The Discovery of Global Warming* (Harvard University Press, 2008)

³⁹⁹ Jutta Brunnée 'Environment, Multilateral Agreements' in R Wolfrum (ed) *Max Planck Encyclopedia of Public International Law* (Oxford University Press, 2011)

⁴⁰⁰ United Nations Framework Convention for Climate Change

https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf

⁴⁰¹ Joanna Depledge *The Organization of Global Negotiations: Constructing the Climate Change Regime* (Earthscan, 2015) t

⁴⁰² Scott Barrett *Environment and Statecraft: The Strategy of Environmental Treaty-Making* (Oxford University Press, 2003)

⁴⁰³ See http://unfccc.int/kyoto-protocol/status_of_ratification/items/2613.php.

Protocol,⁴⁰⁴ others dropped out⁴⁰⁵ and no limits were placed on other developing countries.⁴⁰⁶ Lastly, there is no enforcement mechanism if targets are not achieved,⁴⁰⁷ thus the Kyoto Protocol can be regarded as non-binding 'soft-law',⁴⁰⁸ that does not cover all of the major carbon emitting countries.

However, the legally binding EU renewable electricity regulatory framework developed from the obligations⁴⁰⁹ contained in the UNFCCC,⁴¹⁰ the Kyoto Protocol⁴¹¹ and the Paris COP 21 Agreement.⁴¹²

As stated above, the objectives of international energy and environmental law have traditionally been based on the Brundtland Report⁴¹³ concept of sustainability, which sought to consider present and future generations' needs for energy,⁴¹⁴ whereas the EU's objectives are emissions reduction and security of supply. Thus, the EU and the UN frameworks can be considered as aiming at different targets.⁴¹⁵ However, the EU's framework is designed to comply with, and in certain cases exceed, the EU's obligations contained in the UN's climate change framework.⁴¹⁶

The Kyoto Protocol placed obligations on each signatory as a sovereign state, as well as creating three multilateral mechanisms to fulfil obligations which

⁴⁰⁴ USA, Canada & Australia - See Irene Lorenzoni and Nick Pidgeon 'Public Views on Climate Change: European and USA Perspectives' (2006) 77(1) *Climate Change* 73

⁴⁰⁵ Russia - See David Victor *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (Princeton University press, 2004); Igor Shishlov, Romain Morel and Valentin Bellassen, 'Compliance of the Parties to the Kyoto Protocol in the first commitment period' (2016) 16(6) *Climate Policy*, 768; See Also Fiona Harvey 'The Kyoto Protocol is not quite dead' (2012) <http://www.theguardian.com/environment/2012/nov/26/kyoto-protocol-not-dead> (accessed 3 September 2015)

⁴⁰⁶ China & India - Valentina Bosetti and Jeffrey Frankel 'Politically feasible emissions targets to attain 460 ppm CO₂ concentrations' (2012) 6 *Review of Environmental Economics and Policy*; see also Sheila Olmstead and Robert Stavins 'Three key elements of a post-2012 international climate policy architecture' (2012) 6 *Review of Environmental Economics and Policy*

⁴⁰⁷ Scott Barrett *Environment and Statecraft: The Strategy of Environmental Treaty-Making* (Oxford University Press, 2003)

⁴⁰⁸ Soft-Law can be defined as any instrument other than a Treaty or a Statute, containing principles, norms, standards or other statements of expected behaviour, it can also be market rules developed from an instrument - See Dinah Shelton, 'International Law and Relative Normativity' in Malcom Evans (ed) *International Law* (4th Edition Oxford University Press, 2014), 137, 159

⁴⁰⁹ The terms of the UNFCCC, the Kyoto Protocol and the Paris COP 21 Agreement can be considered to produce binding obligations as their terms fall within the Vienna Convention on the Law of Treaties 1969 Article 2.1 (a) as they are drafted such as to be governed by international law. See Duncan Hollis 'Defining Treaties' in Duncan Hollis (ed) *The Oxford Guide To Treaties* (Oxford University Press, 2013); See Also David Freestone 'The United Nations Framework Convention on Climate Change—The Basis for the Climate Change Regime' in Kevin Gray, Richard Tarasofsky, and Cinnamon Carlarne (eds) *The Oxford Handbook of International Climate Change Law* (Oxford University Press, 2016)

⁴¹¹ <https://unfccc.int/sites/default/files/kpeng.pdf>

⁴¹² https://unfccc.int/sites/default/files/english_paris_agreement.pdf - for a discussion of the Paris Agreement see - Lavanya Rajamani and Emmanuel Guérin 'Central Concepts in the Paris Agreement and How They Evolved' in Daniel Klein, María Pía Carazo, Meinhard Doelle, Jane Bulmer, Andrew Higham, Emmanuel Guérin (eds) *The Paris Climate Agreement: Analysis and Commentary* (Oxford University Press, 2017)

⁴¹³ World Commission on Environment & Development, 'Our Common Future', 4 August 1987, UN, GA res, A/42/427 (1987), Chapter 2, para 1

⁴¹⁴ Edith Brown Weiss *In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity* (Transnational Publishers, 1989)

⁴¹⁵ Lakshman Guruswamy, 'Energy Justice and Sustainable Development' (2010) 21 *Colorado Journal of International Environmental Law and Policy* 231

⁴¹⁶ Olaf Dilling and Till Markus, 'The Transnationalisation of Environmental Law' (2018) 30(2) *Journal of Environmental Law*, 179

can be seen to have been directly implemented within the EU's renewable energy regulatory framework, (i) joint implementation of projects by the parties (allowed within the Renewable Energy Directive),⁴¹⁷ (ii) the clean development mechanism (with parties which did not sign the Protocol),⁴¹⁸ and (iii) emissions trading between parties who signed the Protocol (analogous to the Emissions Trading Directive).⁴¹⁹ The Kyoto Protocol also requires the monitoring and reporting of emissions, which the EU has adopted via the annual Kyoto and EU 2020 Progress Report.⁴²⁰

Despite the UN's framework's shortcomings, the fact that some countries have fully complied is a significant step towards a binding multilateral Treaty,⁴²¹ raising expectations of full adherence to climate agreements.⁴²² The UN's framework has a normative power leading to the gradual emergence by mutual consensus.⁴²³ Also there was a 'euphoria'⁴²⁴ that followed the Kyoto conference that has continued to pervade international climate change agreements.

Therefore, it is put forward that the political and social legacy of Kyoto is its catalysing effect on the EU to implement a comprehensive climate change abatement regulatory framework.⁴²⁵ The EU's climate change regime is therefore made possible by the post Kyoto 'euphoria'⁴²⁶ and its normative power.⁴²⁷

The Paris Climate Change Agreement, the first legally binding global climate change mitigation agreement,⁴²⁸ reached at the 21st Conference of the Parties⁴²⁹

⁴¹⁷ Article 6 Kyoto Protocol

⁴¹⁸ Article 12 Kyoto Protocol

⁴¹⁹ Article 17 Kyoto Protocol

⁴²⁰ European Environment Agency Report 17/2017 'Trends and projections in Europe 2017: Tracking progress towards Europe's climate and energy targets' available at <https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2017> accessed 21 May 2018

⁴²¹ Alan Boyle, 'Soft Law in International Law-Making' in Malcolm Evans (ed) *International Law* (4th Edition Oxford University Press, 2014), 118, 123

⁴²² Jorge Viñuales 'The rise and fall of sustainable development' (2013) 22(1) *Review of European, Comparative & International Environmental Law*

⁴²³ Marie-Claire Cordonier Segger, Ashfaq Khalfan and Salim Nakjavani, 'Weaving the Rules for our Common Future: Principles, Practices and Prospects for International Sustainable Development Law' (2002) www.cisd.org/wtr/pdf/WeavingtheRulesOct2002.pdf 20 accessed 25 July 2017

⁴²⁴ Jorge Viñuales, Joanna Depledge, David Reiner and Emma Lees 'Climate policy after the Paris 2015 climate conference' (2017) 17(1) *Climate Policy* 1, 7

⁴²⁵ Hooi Hooi Lean and Russel Smyth, 'Will Policies to Promote Renewable Electricity Generation be Effective? Evidence from Panel Stationarity and Unit Root Tests for 115 Countries' (2013) 22 *Renewable and Sustainable Energy Reviews* 371

⁴²⁶ Jorge Viñuales, Joanna Depledge, David Reiner and Emma Lees 'Climate policy after the Paris 2015 climate conference' (2017) 17(1) *Climate Policy*, 1, 7

⁴²⁷ Sebastien Oberthür 'The Climate Change Regime: Interactions With ICAO, IMO and the EU Burden-Sharing Agreement' in Sebastien Oberthür and Thomas Gehring (eds) *Institutional Interaction in Global Environmental Governance: Synergy and Conflict Among International and EU Policies* (MIT Press, 2006)

⁴²⁸ Daniel Bodansky, 'The Legal Character of the Paris Agreement' (2016) 25(2) *Review of European, Comparative, and International Environmental Law* 142; See Also Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations' (2016) 28(2) *Journal of Environmental Law* 337

⁴²⁹ A Conference of the Parties (COP) serves as the formal meeting of the parties to the UNFCCC. The COP is the supreme decision-making body of the Convention, are undertaken to assess progress in dealing with climate change, and to negotiate protocols and other legally binding obligations for the reduction of greenhouse gas emissions - <https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop> accessed 21 August 2018. In effect the COP is an autonomous decision making body - Robin Churchill and Geir Ulfstein, 'Autonomous Institutional Arrangements in Multilateral Environmental Agreements: A Little-Noticed Phenomenon in International Law' (2000) 94 *American Journal of International Law* 623

(COP 21) in December 2015, took a very different approach⁴³⁰ to the previous conferences. COP 21 sought to gain agreement to a binding target for temperature growth compared to pre-industrial temperatures of no more than 2°C (with an aspiration of 1.5°C) and then set out to pick up country by country contributions (known as ‘Nationally Determined Contributions’)⁴³¹ such that this target could be achieved. The Parties set aside the top down approach of Kyoto, moving ‘from a commitments to a contributions’ acceptance model,⁴³² making COP 21 a diplomatic success.⁴³³

In effect COP 21 was ‘pragmatic and effective’⁴³⁴ and has implemented a ‘naming and shaming’ enforcement mechanism⁴³⁵ which has turned out to be effective.⁴³⁶

The ‘contributions’ model is important for the EU in its long-term goal of complying with COP 21.⁴³⁷ This leading to consideration of carbon emissions reductions in sectors outside electricity and transport, such as the built environment, agriculture and forestry⁴³⁸ as a mid-century⁴³⁹ sequestration strategy⁴⁴⁰ (transforming land use from carbon source to sink).⁴⁴¹ The COP 21 targets also

⁴³⁰ UNFCCC (2015), ‘Adoption of the Paris Agreement: Proposal by the President’, Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (accessed 13 July 2016).

⁴³¹ A Jordan, D Huitema, M Hildén, H van Asselt, T Rayner, J Schoenefeld, and E Boasson, ‘Emergence of polycentric climate governance and its future prospects’ (2015) 5 *Nature Climate Change*, 977

⁴³² Rafael Leal-Arcas and Luigi Carafa ‘Road to Paris COP21: Towards Soft Global Governance for Climate Change’ (2014) 2 *Renewable Energy Law and Policy*

⁴³³ Richard Kinley ‘Climate change after Paris: from turning point to transformation’ (2016) 17 *Climate Policy*; See Also Fiona Harvey ‘Paris climate change agreement: the world’s greatest diplomatic success’ *The Guardian* (14 December 2015) <https://www.theguardian.com/environment/2015/dec/13/paris-climate-deal-cop-diplomacy-developing-united-nations> accessed 8 October 2018; Raphael Heffron and Peter Cameron, ‘The Future of EU Energy Law’ in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

⁴³⁴ D Victor, J House and S Joy, ‘A Madisonian approach to climate policy’ (2005) 309(16) *Science*, 1820, 1820

⁴³⁵ Joanna Caytas, ‘The COP21 Negotiations: One Step Forward, Two Steps Back’ (2018) 19(1) *Consilience: The Journal of Sustainable Development*, 1

⁴³⁶ Guri Bang, Jon Hovi and Tora Skodvin, ‘The Paris Agreement: Short-Term and Long-Term Effectiveness’ (2016) 4(3) *Politics and Governance* 209

⁴³⁷ J Sterman, A Jones, E Johnston and L Siegel, ‘Climate Interactive Ratchet Success Pathway: Assumptions and Results’ (2015) *Climate Interactive*, 4, <https://www.climateinteractive.org/wp-content/uploads/2015/12/Ratchet-Success-14-December-2015.pdf> accessed 5 Apr. 2016

⁴³⁸ Deep Decarbonization Pathways Project (DDPP) (2015), ‘Pathways to deep decarbonisation’, Sustainable Development Solutions Network & the Institute for Sustainable Development & International Relations, http://deepdecarbonization.org/wpcontent/uploads/2016/03/DDPP_2015_REPORT.pdf accessed 5 April 2016

⁴³⁹ Article 4 of ‘Paris Climate Change Agreement of Parties to United Nations Framework Convention on Climate Change’ (COP 21) available at https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf accessed 30 October 2016

⁴⁴⁰ Sabina Hyseni ‘Carbon Capture and Storage as a Method to Mitigate Climate Change’ (2017) 9(3) *Inquiries Journal*; see also D Leung, G Caramanna, and M Maroto-Valer ‘An overview of current status of carbon dioxide capture and storage technologies’ (2014) 39 *Renewable and Sustainable Energy Reviews*, 426

⁴⁴¹ B Caldecott, G Lomax, and M Workman, ‘Stranded Carbon Assets and Negative Emissions Technologies: Working Paper’ (2015) *Smith School of Enterprise & the Environment*, University of Oxford, <http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/Stranded%20Carbon%20Assets%20and%20NETs%20-%2006.02.15.pdf> (accessed 5 April 2016); See also Lalisa Dugumar, Peter Minang and Meine van Noordwijk ‘Climate Change Mitigation and Adaptation in the Land Use Sector: From Complementarity to Synergy’ (2014) *Journal of Environmental Management*; see also Göran Berndes, Neil Bird and Annette Cowie ‘Bioenergy, Land Use Change and Climate Change Mitigation’ [2010] *IEA Bioenergy*

result in a greater emphasis being given to the Carbon Capture and Storage Directive.⁴⁴²

Despite certain countries (specifically the USA⁴⁴³ and China) being unlikely to maintain their international commitments, France has proposed to include climate change abatement within its constitution.⁴⁴⁴

Any failure to maintain the COP 21 commitments is likely to result in carbon emitting forms of generation (coal and gas) operating for longer than anticipated. Once these additional emissions are fed into the EU's modelling for the 2030 and 2050⁴⁴⁵ climate change targets it is likely that the targets will need to increase (see Section 2.10) and thus the EU must develop its future regulatory framework with suitable mitigation strategies to guard against commitment failure by others.⁴⁴⁶

2.6 EU's Definition of Renewable Energy – Environmental Lunacy

As described above the EU's renewable energy policy was formulated to allow it to discharge its UNFCCC obligations. In 1995 the UN defined renewable energy such that its needs to be replaceable within the broad span of a human lifetime.⁴⁴⁷

In developing its 1995 Green Paper for a 'European Union Energy Policy'⁴⁴⁸ the EU largely followed the UN drafting.

The EU's definition has changed little since that time. However, the most recent incarnation set out in the 2014 Guidelines on state aid for environmental protection and energy⁴⁴⁹ states renewable energy is that derived from:-

UN 1995 Definition	EU 2014 Guidelines Definition
Wind, solar, biomass, geothermal, hydropower and ocean (wave)	wind, solar, aero-thermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases ⁴⁵⁰

⁴⁴² Council Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide OJ L140/114

⁴⁴³ V McGrane, 'Trump's Greatest Mission: Erasing Obama's Legacy' 16 December 2017 The Boston Globe; Available at <https://www.bostonglobe.com/news/nation/2017/12/16/trump-greatestmission-erasing-obama-legacy/OA9M4qwS2hHIOj3MGLxGxK/story.html> Accessed 28 December 2017

⁴⁴⁴ <http://www2.assemblee-nationale.fr/langues/welcome-to-the-english-website-of-the-french-national-assembly>

⁴⁴⁵ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

⁴⁴⁶ Luke Kemp 'US Proofing the Paris Climate Agreement' (2017) 17(1) Climate Policy

⁴⁴⁷

http://unfccc.int/resource/cd_roms/na1/mitigation/Resource_materials/Greenhouse_Gas_Mitigation_Assessment_Guidebook_1995/chap09.pdf accessed 27 August 2018

⁴⁴⁸ EU COM(94) 659 'Green Paper for a European Union energy policy'

⁴⁴⁹ EU COM (2014/C 200/01)'Guidelines on State aid for environmental protection and energy 2014-2020' -

⁴⁵⁰ The inclusion of aero-thermal and hydrothermal energy reflects the extension of the renewables' regulatory framework to include not just electricity and transportation, but heating and cooling, as air conditioning within buildings becomes more important across the EU – See Angus Johnston and Guy Block, *EU Energy Law*, (1st edn. Oxford University Press, 2012), 309: Also The Renewable Energy Directive's Article 5(3) allows multi-fuel

Continuing to define renewable energy largely based on the 1995 UN definition this has led to the EU (in addition to the UN) allowing several energy sources that emit carbon in the production of electricity (biomass, landfill gas, sewage treatment plant gas, biogases and multi-fuel plants) to be reported as renewable. It should be noted that the EUs definition does not contain nuclear which is carbon emission free in the production of electricity.

It is argued here that within an EU context it is '*environmental lunacy*'⁴⁵¹ to continue to the use a definition of renewable energy that includes energy sources that produce carbon in their production of electricity. Therefore, in looking to the 2030 and 2050 periods (described in Sections 2.11) the definition of renewable energy must focus on eliminating carbon emissions and developing renewable energy from sources such as hydro, wind and solar (the currently most popular forms of renewable energy in the EU being hydro and wind)⁴⁵² to fully decarbonise the electricity sector. Therefore biomass, landfill gas, sewage treatment plant gas and biogases should be removed from the definition and to fail to do so is an opportunity lost.

2.7 Renewables – Costs of Production & the Need for Revenue Support

The UN places obligations on the EU and its member states to transition⁴⁵³ the electricity sector from a largely coal and nuclear based sector to one based on renewables.⁴⁵⁴

It should be noted that the price of electricity produced by any generating facility is a combination of the cost of the fuel, maintenance and the recovery of the capital build costs.⁴⁵⁵ When the 'transition' commenced in the 1990s renewable

plants (hybrid-plants) to also be reported as renewable, as considered in Case C- 209/09 *Lahti Energia Oy* ECLI:EU:C:2010:98

⁴⁵¹ The Economist 'Wood: The fuel of the future. Environmental lunacy in Europe' (2013) <http://www.economist.com/news/business/21575771-environmental-lunacy-europe-fuelfuture> Accessed 17 May 2017

⁴⁵² <http://ec.europa.eu/eurostat/web/energy/data/shares> accessed 14 June 2018

⁴⁵³ Stuart Bruce 'The sustainable energy transition through international and EU law' in Stephen Minas and Vassilis Ntousas (eds) *EU Climate Diplomacy Politics, Law and Negotiations* (Routledge, 2018); see also Manuel Welsch *Europe's Energy Transition: Insights for Policy Making* (Elsevier, 2017), Thomas Pellerin-Carlin, Jean-Arnold Vinois, Eulalia Rubio, Sofia Fernandes *Making the Energy Transition a European Success tackling the Democratic Innovation, Financing and Social Challenges of the Energy Union* (Jacques Delors Institute, 2017)

⁴⁵⁴ Sandra Enkhardt 'Germany: Renewables beat coal for the first time' [2018] pv magazine Deutschland; See also Silvio Marcacci 'Uneconomic coal could be squeezed out of European Union power markets by 2030' [2018] Energy Post

⁴⁵⁵ Monica Greer *Electricity Cost Modeling Calculations* (Elsevier, 2010)

electricity generating technology was in its infancy⁴⁵⁶ and thus renewable electricity was more expensive to produce (caused by increased capital and operational costs) than electricity derived from classical thermal sources (coal and gas).⁴⁵⁷ Additionally, as a result of their higher capital cost per unit of installed capacity than coal and gas fuelled plants, renewable installations were and are more exposed to capital rationing⁴⁵⁸ and cost of capital⁴⁵⁹ issues, which means that financing⁴⁶⁰ and tax management⁴⁶¹ are particularly important for renewables. Despite these cost issues the technology was considered worthy of financial support⁴⁶² at the EU and member state level (most of the financial support being derived from member states via what is called a 'support scheme'⁴⁶³ within the Renewable Energy Directive).⁴⁶⁴

⁴⁵⁶ Sergey Mityakov and Margarita Portnykh, 'The Infant Industry Argument and Renewable Energy Production' (2012) Marshall Institute Working Paper

⁴⁵⁷ Attila Hajos, Paget Fulcher, Ian Johnson, Goran Strbac and Danny Pudjianto 'Supporting investments into renewable electricity in context of deep market integration of RES-e after 2020: Study on EU-, regional- and national-level options', (2015) CEPA London, ENER/C1/2015-39

⁴⁵⁸ Capital rationing is essentially a management approach to allocating available funds across multiple investment opportunities, increasing a company's bottom line. The combination of projects with the highest total net present value (NPV) is accepted by the company. The number one goal of capital rationing is to ensure that a company does not over-invest in assets. Without adequate rationing, a company might start realizing decreasingly low returns on investments and may even face financial insolvency.

www.investopedia.com/terms/c/capitalrationing.asp#ixzz5Pxx7mwcb accessed 31 August 2018

⁴⁵⁹ Cost of capital is the required return necessary to make a project worthwhile. Cost of capital includes the cost of debt and the cost of equity. Another way to describe cost of capital is the cost of funds used for financing a business. Cost of capital depends on the mode of financing used — it refers to the cost of equity if the business is financed solely through equity, or to the cost of debt if it is financed solely through debt. Many companies use a combination of debt and equity to finance their businesses and, for such companies, the overall cost of capital is derived from a weighted average of all capital sources, widely known as the weighted average cost of capital (WACC). Since the cost of capital represents a hurdle rate that a company must overcome before it can generate value, it is extensively used in the capital budgeting process to determine whether the company should proceed with a project. <https://www.investopedia.com/terms/c/costofcapital.asp#ixzz5Pky4NTyQ> Accessed 31 August 2018

⁴⁶⁰ As the 'fuel' for renewable electricity (wind and solar) is free, ongoing costs are composed of financing and operational costs. Therefore reducing the cost of capital (combination of equity and debt forms the weighted average cost of capital or WACC) is important to ensure applicable rates of return are achieved; See J Ondraczek, N Komendantova and A Patt, 'WACC the dog: The effect of financing costs on the levelised cost of solar PV power' (2015) 75, *Renewable Energy*, 888

⁴⁶¹ Ensuring that maximum capital allowance are accrued during the development and construction phase followed by minimisation of ongoing tax is important to minimise revenue leakage during the operational phase of a project; See C Donovan, *Renewable energy finance: powering the future*, (Imperial College Press, 2015)

⁴⁶² The concept of an industry in its infancy which is worthy of support should satisfy the two following conditions: (1) the costs of production should eventually be below the costs of technologies currently utilised; and (2) future savings in costs (compared to existing technologies) should compensate for the initial cost of supporting the infant industry. More importantly, the infant industry argument requires some form of market failure, e.g., externalities or imperfect financial markets; otherwise free markets would deliver the efficient outcome. Even in cases where such imperfections exist, support in the form of production subsidies is an inappropriate policy instrument, since it is unlikely to solve these market failures. — the so called Mill-Bastable test — Charles Bastable *The Commerce of Nations* (Wentworth Press, 2016) — outline of the test contained in Sergey Mityakov and Margarita Portnykh, 'The Infant Industry Argument and Renewable Energy Production' (2012) Marshall Institute Working Paper; For a counter argument see Robert Baldwin, 'The Case against Infant-Industry Tariff Protection' (1969) 77(3) *Journal of Political Economy*, 295

⁴⁶³ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' — Article 2 Renewable Energy Directive (2009/28/EC)

⁴⁶⁴ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

It should be noted that the 'support schemes' are not declared state aid under the State Aid - General Block Exemption Regulation (GBER)⁴⁶⁵ and the Commission's 2014 Guidelines on State Aid for Environmental Protection & Energy,⁴⁶⁶ however, as the case law analysis in Sections 3.5.9 to 3.5.12 will show support scheme design is key to it not being declared state aid.

The wholesale price of electricity is set by the most expensive generating facility operating at any particular time⁴⁶⁷ (known as the 'marginal cost' – See Annex 2).⁴⁶⁸ In most EU countries the marginal generating facility and thus setting the wholesale is gas fired generation, which has a price point broadly 50% to 60%⁴⁶⁹ that of currently operating wind generated renewable facilities.⁴⁷⁰ This price differential resulting from lower capital costs and the incomplete internalisation into the output price of the generating facilities of costs such as carbon emissions, energy security⁴⁷¹ and a partial implementation of the 'polluter pays'⁴⁷² principle (Article 191(2) TFEU).

These omissions from the output price of generating facilities allows gas and coal fuelled generation to emit greenhouse gases without being forced to fully pay for the abatement of these emissions, despite the 'polluter pays' principle being said to be mandatory in the EU⁴⁷³ (see *Raffinerie Mediterranée*).⁴⁷⁴

In considering potential mechanisms to internalise the costs of carbon emissions, energy security⁴⁷⁵ and the like across coal and gas fired generating

⁴⁶⁵ EU Regulation No 1588/2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, OJ 2015 L 248/1, and European Commission, Regulation (EU) No 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. General Block Exemption Regulations for State aid ('GBER')

⁴⁶⁶ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01.

⁴⁶⁷ The wholesale price is dynamic, changing half hourly based on the demand for electricity and the availability of generating facilities. Generators submit 'offers' to the market operator indicating the amount of energy they are willing to supply and at what price. <http://www.rwe.com/web/cms/en/403722/rwe/press-news/how-the-electricity-price-is-determined/>

⁴⁶⁸ Paul Deane, Seán Collins, Brian Ó'Gallachóir, Cherrelle Eid, Rupert Hartel, Dogan Keles and Wolf Fichtner 'Impact on Electricity Markets: Merit Order Effect of Renewable Energies' in Manuel Welsch, Steve Pye, Dogan Keles, Aurélie Faure-Schuyer, Audrey Dobbins, Abhishek Shivakumar, Paul Deane, Mark Howells (eds) *Europe's Energy Transition - Insights for Policy Making Findings* (Elsevier, 2017)

⁴⁶⁹ European Power Exchange - <https://www.epexspot.com/en/> - accessed 11 August 2016

⁴⁷⁰ Dieter Helm, 'Cost of Energy Review', 25 October 2017, Table 12, p. 104 available at http://www.biee.org/wpcms/wp-content/uploads/Cost_of_Energy_Review.pdf.

⁴⁷¹ W J Nuttall, *Nuclear Renaissance: Technologies and Policies for the Future of Nuclear Power* (CRC Press, 2004), 42; See Also Penelope Crossley, 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁴⁷² J Krzeminska, 'Are Support Schemes for Renewable Energies Compatible with Competition Objectives? An Assessment of National and Community Rules' (2007) 7 Yearbook of European Environmental Law 132

⁴⁷³ G Winter, 'The legal nature of environmental principles in international, EC and German law' in R Macrory (ed.) *Principles of European Environmental Law* (Europa Law Publishing, 2004), 19

⁴⁷⁴ Case C-378/08 *Raffinerie Mediterranée (ERG) SpA, Polimeri Europa SpA and Syndial SpA v Ministero dello Sviluppo economico and Others* ECLI:EU:C:2010:126, para 46

⁴⁷⁵ Penelope Crossley, 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

facilities, what must be remembered is that this will increase the cost of electricity that is not renewables based (increasing electricity bills for all, including those currently in fuel poverty,⁴⁷⁶ in 2016 48.7% of electricity produced in the EU was from combustion sources - coal and gas etc.).⁴⁷⁷ Hence putting in place a legal structure that would internalise these costs is considered simplistic.⁴⁷⁸ It always being remembered that having access to electricity supplies increases the consumer's ability to become self-reliant, enabling the individual to become a socially and economically active participant in society.⁴⁷⁹

Before a legal structure can be determined legislators will need to balance the social and economic implications⁴⁸⁰ of the outcome. A significant price increase across the whole of the electricity sector is believed to merely result in the shift of industrial production to jurisdictions where carbon emissions are not internalised into electricity prices⁴⁸¹ (so called 'carbon leakage').⁴⁸² Thus legislators and regulators

⁴⁷⁶ fuel poverty is: where fuel costs to that individual or consumer are such that post expenditure that individual or consumer would be left with a residual income below the official poverty line – See 'Fuel Poverty: a framework for future action' (2013) Department of Energy & Climate Change https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/211180/FuelPovertyFramework.pdf accessed 21 August 2018

⁴⁷⁷ https://ec.europa.eu/eurostat/statistics-explained/index.php/Electricity_production,_consumption_and_market_overview#Electricity_generation accessed 31 August 2018

⁴⁷⁸ Peter Brown, 'Lessons for Carbon Capture and Storage from the Rollout of Flue-gas Desulphurisation Technology' (2015) 2 Transform - Institute of Environmental Management & Assessment Working Paper

⁴⁷⁹ Stefan Bouzarovski and Saska Petrov, 'A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary' (2015) 10 Energy Research & Social Science, 31; See Also Steve Pye and Audrey Dobbins, 'Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures' (2015) INSIGHT – European Commission 7th Framework Programme

⁴⁸⁰ Jesse Jenkins, 'Political economy constraints on carbon pricing policies: What are the implications for economic efficiency, environmental efficacy, and climate policy design?' (2014) 69 Energy Policy, 467

⁴⁸¹ M Babiker, 'Climate change policy, market structure, and carbon leakage' (2005). 65 Journal of International Economics, 421; See Also Mohamed Amine Boutabba and Sandrine Lardic, 'EU Emissions Trading Scheme, Competitiveness and carbon leakage: new evidence from cement and steel industries' (2017) 255(1) Annals of Operations Research, 47; See Also Hui Zhou and Jichuan Sheng, 'Has EU ETS caused carbon leakage in the EU carbon-intensive industries? A study from the perspective of bilateral trade' (2015) 13(2) Chinese Journal of Population Resources and Environment, 132

⁴⁸² The EU defines carbon leakage as the prospect of an increase in global greenhouse gas emissions when companies shift production outside the Union because they cannot pass on the cost increases induced by the EU ETS to their customers without significant loss of market share' para 7 - Commission Communication 5 June 2012 'Guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012' OJ 2012/C 158/04; Considering the issue more widely; carbon leakage theory postulates that in the absence of a globally co-ordinated climate change policy, production of goods and services based on fossil fuels will move to countries with less stringent environmental regulation therefore offsetting the carbon emission savings realised in countries where climate change policy is in place. - Edward Foster, Marcello Contestabile, Jorge Blazquez, Baltasar Manzano, Mark Workman, Nilay Shah, 'The unstudied barriers to widespread renewable energy deployment: Fossil fuel price responses' (2017) 103 Energy Policy, 258; See Also Jean Tirole, 'Some Political Economy of Global Warming'. (2012) 1(1) Economics of Energy & Environmental Policy, 1; Mohamed Amine Boutabba and Sandrine Lardic, 'EU Emissions Trading Scheme, Competitiveness and carbon leakage: new evidence from cement and steel industries' (2017) 255(1) Annals of Operations Research, 47; See Also Hui Zhou and Jichuan Sheng, 'Has EU ETS caused carbon leakage in the EU carbon-intensive industries? A study from the perspective of bilateral trade' (2015) 13(2) Chinese Journal of Population Resources and Environment, 132

need to recognise that interventions in the electricity market need to be well designed and proportionate⁴⁸³ to avoid additional market distortions.⁴⁸⁴

Looking to the future of renewable electricity, however, this price differential may not be as significant an issue as it has been historically or currently. The recent auction process for offshore renewable sites in the UK (known as a ‘concession auction’) resulted in the UK’s Hornsea 3 Project bidding an output price broadly equal to the output price of coal and gas generation and as such the wholesale electricity market – a price point known as ‘grid parity’.⁴⁸⁵ Also German developer EnergieKontor has announced that two UK onshore sites ‘Pines Burn’ and ‘Withernwick II’ would be built ‘*subsidy-free*’.⁴⁸⁶

With revenue support for renewable electricity becoming less of a feature moving forward and the EU should change its focus to one focussed on carbon emissions reduction which does not favour one technology as a means of production (e.g. wind based renewables).

2.8 EU & Member State Renewable Energy Regulatory Institutions – Commission, CJEU, ACER and National Regulators

In seeking to fulfil its obligation of reduced carbon emissions under the UNFCCC (See Section 2.5) the EU, and its member states, set a proxy objective relating to the installation of renewable electricity generating capacity. The conclusions of the EU Council of 26 November 2015⁴⁸⁷ recognised that the governance of the ‘energy union’⁴⁸⁸ will be an essential tool for the achievement of its objectives. To this end an understanding of the three EU organisations providing governance within the renewable energy sector is required.

⁴⁸³ Meaning that ‘measures should not exceed the limits of what is appropriate and necessary for attaining the objective pursued, and that where is a choice between several appropriate measures must be had to the least onerous’ Case T-419/03 *Altstoff Recycling Austria v Commission* ECLI:EU:T:2011:102, para 134; Also ‘proportionality’ or ‘being proportionate’ can be considered an ideal or a goal rather than being a principle with the same status as ‘polluter pays’ or the ‘precautionary’ principle. – see Jonathon Verschuuren, ‘Sustainable Development and the Nature of Environmental Legal Principles’ (2006) (1)9 *Potschefstroom Electricity Law Journal*, 17; See Also Jurian Langer and Wolf Sauter ‘The Consistency Requirement in EU Law’ (2017) 39 *Journal of European Law*

⁴⁸⁴ European Commission SWD(2013) 439 ‘European Commission guidance for the design of renewables support schemes’

⁴⁸⁵ Daniel Radov, Alon Carmel and Clemens Koenig, ‘Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a “Zero-Subsidy” Future’ (2017) NERA Economic Consulting

⁴⁸⁶ Energiekontor AG company press release 31 August 2018 – available at <https://www.energiekontor.co.uk/news> accessed 31 August 2018

⁴⁸⁷ Conclusions of the Council of 26 November 2015 (14632/15)

⁴⁸⁸ Commission (Comm 2015) 25 February 2015 ‘A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy’; outlines the five pillars of the Energy Union (i) Energy security, solidarity and trust; (ii) A fully integrated European energy market; (iii) Energy efficiency contributing to moderation of demand; (iv) Decarbonising the economy, and (v) Research, innovation and competitiveness

In relation to renewable electricity the main EU institution charged with the day to day governance of the renewable electricity regulatory framework is the Commission.⁴⁸⁹ The Commission has a duty to ensure the provisions of the Treaty and other aspects of EU law are upheld, which can require the Commission initiating judicial processes against member states or other institutions⁴⁹⁰ (the Commission has thus been called the '*guardian of the treaties*').⁴⁹¹

The Commission, in accordance with Article 3(3) TEU, has competence around environmental protection. Furthermore, in accordance with Article 4 TEU areas of policy not specifically conferred upon an EU institution remain with member states (e.g. energy). Therefore, in areas where competence remains with the member states, in accordance with subsidiarity,⁴⁹² the Commission has no need to intervene when member states can deal with the issue effectively.

Based on the principle of conferral and the Commission's competences, it has an important regulatory role within the renewable electricity sector. The Commission's most regular intervention in a governance or adjudicative capacity in the renewable electricity sector relates to state aid, either via the allocation of emission allowances as part of the EU-ETS or the application of feed-in tariffs via the Renewable Energy Directive.⁴⁹³ The Commission has extensive state aid decision making and enforcement powers conferred by Article 106 TFEU. The use of these powers by the Commission in the context of environment and energy are set out in the Guidelines on State Aid for Environmental Protection and Energy.⁴⁹⁴ The Guidelines are nonbinding expressions of policy by the Commission (essentially 'soft-law') however, they are normative and the CJEU has held guidelines developed by the Commission are binding on the Commission.⁴⁹⁵

The Commission can also deliver reasoned opinions against a member state where it believes that the member state has failed to fulfil an obligation under the

⁴⁸⁹ https://web.archive.org/web/20070623104055/http://europa.eu/institutions/inst/comm/index_en.htm

⁴⁹⁰ Anne Bonnie, 'The Evolving Role of the European Commission in the Enforcement of Community Law: From Negotiating Compliance to Prosecuting Member States?' (2010) 1(2) Journal of Consciousness Exploration & Research

⁴⁹¹ European Parliament resolution of 15 December 2010 on the situation of fundamental rights in the European Union (2009) – effective implementation after the entry into force of the Treaty of Lisbon (2009/2161(INI)) 2012/C 169 E/07 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1551216984520&uri=CELEX:52010IP0483> – accessed 1 October 2018

⁴⁹² The principle of subsidiarity confirms which EU party (member states or European institutions) should act where competence is shared (where the EU does not have exclusive competence). The principle acts where EU objectives cannot be effectively achieved by member states, but can be better achieved at EU level – See Article 5 TFEU and Protocol 2 TFEU.

⁴⁹³ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁴⁹⁴ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01

⁴⁹⁵ Case C-313/90 *Comité International de la Rayonne et des Fibres Synthétiques v Commission* ECLI:EU:C:1993:111, para. 36; See Also Case C-351/98 *Spain v Commission* ECLI:EU:C:2002:530, para 53

Treaty (Article 258 TFEU). Failure to comply with a reasoned opinion can result in a referral by the Commission of the member state to the CJEU.

The number of decisions or opinions issued by the Commission, and the normative, legitimising and binding nature of the Commission's policy guidelines and other pronouncements⁴⁹⁶ create a history of decision making that is a track record. As such it is argued that the Commission has a governance and regulatory personality acting similarly in similar circumstances. Therefore, a change in policy (as can be seen between 2008 and the 2014 Guidelines Related to State Aid, where the 2014 Guidelines focuses almost exclusively on the economic-effectiveness of the support mechanisms, requiring member states to use only auction processes for awarding renewables support, whereas the 2008 Guidelines allowed a more technology focussed and thus differentiated approach) is an example of a shift in the regulatory paradigm which is not universally welcomed.⁴⁹⁷

Despite the many shortcomings of the Commission in the exercise of a regulatory role, its normative and legitimising position, with a desire to do the best for all EU members,⁴⁹⁸ gives it a unique opportunity to shape outcomes by setting the regulatory agenda rather than reacting to it.⁴⁹⁹ An example of this kind of practice is the Commission's attempt to replace the national allocation plans for emissions allowances when the 'plans' were considered to be conferring an advantage on certain undertakings. Although censured by the CJEU for doing so it is argued that the Commission was trying to do the right thing by preserving the EU-ETS and apply best environmental and economic practice (See Section 2.10.1).

Additionally, the CJEU is given a governance role via a series of powers conferred upon it within TFEU, an example being Article 267 TFEU, the preliminary ruling procedure. Article 267 TFEU allows national courts faced with a question over the interpretation or validity of EU legislation to seek interpretive guidance from the CJEU, or to request the CJEU to determine the validity of the actions of the EU's institutions (e.g. Commission). The CJEU's case law guides EU institutions, member states, commercial undertakings and EU citizens, but especially national courts that must follow legal interpretation of EU law provided by the CJEU. From a predictive standpoint the number of judgements from the CJEU creates a history of decision making that can again be seen as a track record.

⁴⁹⁶ Neil Nugent and Mark Rhinard, 'The political roles of the European Commission' [2019] *Journal of European Integration*

⁴⁹⁷ Randy Mott, 'New State Aid Guidelines for Renewable Energy Discourage Competition, Green Energy and Energy Security' (2015) 5(2) *European Energy Journal*

⁴⁹⁸ EU COM(2016) 615 'Better Regulation: Delivering better results for a stronger Union'

⁴⁹⁹ Neil Nugent and Mark Rhinard *The European Commission* (Palgrave Macmillan, 2105)

An EU institution that has only recently been brought into the sphere of governance of renewable electricity is the Agency for the Cooperation of Energy Regulators (ACER - created in 2011, as part of the Third Energy Package to further progress the completion of the internal energy market for both electricity and natural gas).⁵⁰⁰ As an independent EU organisation ACER's role is to foster cooperation between energy regulators across the EU. ACER seeks to enhance market integration and the harmonisation of national regulatory frameworks within the EU's framework, thus creating a more competitive integrated market, guaranteeing free movement and deterring abusive practices.⁵⁰¹

It is asserted that ACER, like the Commission, is developing an increasingly political role⁵⁰² and therefore it is likely that the future will see more appeals against ACER's decisions. The political focus of ACER's work brings with it different risks for the operators of renewable electricity facilities as there is little history on how ACER will determine issues before it. As the work of ACER is not purely confined to one country, there is likely to be an increased number of multi-national regulatory decisions. The development of the technical rules relating to running the electricity market will increasingly come within the purview of ACER.⁵⁰³ As such these rules

⁵⁰⁰ The development of Agencies such as ACER within the EU had been restricted due to what is known as the 'Meroni Doctrine' (developed from Case C-9/56 *Meroni v High Authority* ECLI:EU:C:1958:7). 'The doctrine states that competencies conferred on EU institutions cannot in turn be delegated to an EU agency without an explicit decision, although an explicit Treaty base is not indispensable. If powers are delegated, they cannot be 'discretionary' to such an extent that the 'wide margin of discretion' might enable the 'execution of actual economic policy'. The latter would mean an illegal transfer of responsibility (it is the delegator, not the delegate, making the policy choices) and would alter the balance of powers, later interpreted as the 'institutional balance' between the EU institutions. Any delegated powers should be embedded in or accompanied by guarantees of judicial review, transparency and active consultation. To this end, it is also required to delegate powers under precise rules and within boundaries carefully defined by the EU legislator.' – derived from Jacques Pelkmans and Marta Simoncini 'Mellowing Meroni: How ESMA can help build the single market' [2014] Centre for European Policy Studies available at <https://www.ceps.eu/system/files/Mellowing%20Meroni.pdf> Accessed 12 February 2019. Following the judgment of the CJEU in Case C-270/12 *UK v Parliament & Council* ECLI:EU:C:2014:18 (so called ESMA case) the Meroni Doctrine has been softened such that reasonable delegation of power and discretion can be made to agencies such as ACER. ;See Also Herman Lelieveldt and Sebastiaan Princen *The Politics of the European Union* (Cambridge University Press, 2011), 271; Vassilis Hatzopoulos *Regulating Services in the European Union* (Oxford University Press, 2012), 325

⁵⁰¹ https://www.acer.europa.eu/en/The_agency/Pages/default.aspx

⁵⁰² Briefing EU Legislation in Progress 'New rules for the Agency for the Cooperation of Energy Regulators (ACER)' (2 May 2018)

[http://www.europarl.europa.eu/RegData/etudes/BRIE/2017/599300/EPRS_BRI\(2017\)599300_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2017/599300/EPRS_BRI(2017)599300_EN.pdf) accessed 22 June 2018

⁵⁰³ ACER/CEER - Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2016 (October 2017) https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202016%20-%20ELECTRICITY.pdf accessed 23 July 2018

(e.g. REMIT)⁵⁰⁴ may thus become more harmonised, assisting in the increase of cross-border trades.⁵⁰⁵

The increasing role of ACER as a regulatory body across the EU was highlighted as a regulatory risk during the empirical research due to the lack of a history of regulatory determinations.

National regulators are usually set up by an appropriate statute within the member state. The national regulators therefore undertake the day to day regulation of renewable electricity facilities in the member states. The national regulators are key to ensuring that utility companies within each member state meet their obligations under both EU and national law and energy policy. Across the EU, national regulators are generally charged with actively ensuring compliance with the regulatory framework, usually in the interest of consumers.⁵⁰⁶ National regulators are therefore implementers and enforcers of regulation and thus their role should not be political. However, it has been said that national regulators are liable to capture by the industry which they regulate, can develop a political bias, and are prone to behavioural failures.⁵⁰⁷ Despite these supposed failures, the empirical research showed that the utility companies across the EU spend a considerable amount of time and resources in managing their relationship with the both EU and national regulators, seeking to influence the development of these bodies. The empirical research also showed that in some instances the utility companies will seek to hold the regulators to account via judicial review (See Theme 1.3 *UK Judicial Review*).⁵⁰⁸

As a last point, the number of regulatory decisions made by national regulators in the electricity field creates a track record that undertakings use as a means of predicting the regulatory future within the member state; again, this was an issue which emerged as a theme in the empirical research.

⁵⁰⁴ REMIT is the EU Regulation 'On energy market integrity and transparency (No 1227/2011). It provides a consistent EU-wide regulatory framework specific to wholesale energy markets that: (i) defines market abuse, including market manipulation, attempted market manipulation or insider trading, (ii) explicitly prohibits market abuse (iii) requires effective and timely public disclosure of inside information by market participants (for all practical purposes this relates to generating plant outage information), and (iv) obliges firms professionally arranging transactions to report suspicious transactions - Regulation (1348/2014/EC) on data reporting implementing Article 8(2) and Article 8(6) of Regulation (EU) No 1227/2011 OJ L336

⁵⁰⁵ Ana Stanic 'An Overview of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 46

⁵⁰⁶ Olaf Dilling, 'Proactive Compliance? – Repercussions of National Product Regulation in Standards of Transnational Business Networks' in Olaf Dilling, Martin Herberg and Gerd Winter (eds), *Responsible Business: Self-Governance and Law in Transnational Economic Transactions* (Hart, 2008) 118–119

⁵⁰⁷ Damien Geradin and Nicolas Petit, 'Judicial Review in European Union Competition Law: A Quantitative and Qualitative Assessment' (2011) 8 *Tilburg Law and Economics Center*, 7

⁵⁰⁸ *Peak Gen Top Co Ltd & Ors, R (on the application of) v The Gas And Electricity Markets Authority & Anor*, Court of Appeal - Administrative Court, June 22, 2018, [2018] EWHC 1583 (Admin) - relating to the process the regulator had followed, where the UK administrative court found in Ofgem's [UK Energy Markets Regulator] favour

2.9 Treaty Provisions - Environmental and Energy Regulatory Framework

Since the execution of the Treaty of Rome the priorities of the EU have developed, because of the accession of several new member states⁵⁰⁹ and the changing objectives of society,⁵¹⁰ especially with regards to the environment and climate change.⁵¹¹

Environmental and energy provisions are set out for the EU within the TEU when it states in Article 3(3) that the EU shall implement measures that provide ‘a high level of protection and improvement of the quality of the environment’.⁵¹² With Article 6(3) TEU stating that ‘protection and improvement of human health’ is an EU competence alone.⁵¹³ The TFEU is differently drafted, stating in Article 4(2) that environment, transport (in the renewable energy context bio-diesel), trans-European networks and energy are shared competences between member states and the EU.⁵¹⁴

The EU is also required by Article 11 TFEU to integrate environmental protection and sustainable development into the definition and implementation of its policies. This requirement seems to be placed on the organisations of the EU and not to the same extent on member states.⁵¹⁵ (See Section 2.9.1)

The EU and its member states are additionally required by the provisions of the Articles 170 to 172 TFEU to update and increase the capacity of Europe’s energy infrastructure (Article 170(1) TFEU), to link island, land locked and peripheral regions with central regions of the EU (Article 170(2)). This is a requirement that has significance for the findings of the CJEU within *Ålands Vindkraft*⁵¹⁶ (See Section 3.5.2).

⁵⁰⁹ Finn Laursen, *The Treaty of Nice: Actor Preferences, Bargaining and Institutional Choice* (Martinus Nijhoff, 2005), 393

⁵¹⁰ Willem Maas, ‘The Origins, Evolution, and Political Objectives of EU Citizenship’, (2014) 15(5) German Law Journal, 797 ; See also European Commission ‘EU in Brief’, https://europa.eu/european-union/about-eu/eu-in-brief_en accessed 25 July 2017; See Also Joris Larik, ‘From Speciality to a Constitutional Sense of Purpose: the Changing Role of the Objectives of the European Union’ (2014) 63(4) International & Comparative Law Quarterly, 935; See Also European Centre for Development Management and Policy, ‘Evaluation Study on the EU Institutions & member states’ Mechanisms for Promoting Policy Coherence for Development. Final Report’, May 2007

⁵¹¹ D Benson and A Jordan, ‘Grand bargain or ‘incomplete contract’? Environmental implications of the EU Reform Treaty’ (2008) 17(5) European Energy and Environmental Law Review, 280; See also Saylor Academy Paper available at <https://www.saylor.org/site/wp-content/uploads/2011/05/Treaty-of-Lisbon.pdf> accessed 15 September 2015; Roger Goebel, Eleanor Fox, George Bermann, Jeffery Atik, Frank Emmert and Damien Gerard Cases and Materials on European Union Law 4th Edition (West Academic, 2016)

⁵¹² Treaty of the European Union, 2008 OJ (C 115) 16, article 3(3)

⁵¹³ Alexander Proelss ‘The Scope of the EU’s Competences on the Field of the Environment’ In: Yumiko Nakanishi (ed) *Contemporary Issues in Environmental Law. Environmental Protection in the European Union*, vol 5 (Springer, 2016)

⁵¹⁴ Sanam Haghighi, ‘Energy Security and the Division of Competences between the European Community and its member states’ (2008) 14(4) European Law Journal, 461

⁵¹⁵ Beate Sjäfjell, ‘The Legal Significance of Article 11 TFEU for EU Institutions and Member States’ in Beate Sjäfjell and Anja Wiesbrock (eds) *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously* (Routledge 2015)

⁵¹⁶ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

The main Treaty articles which outline the provisions related to environmental protection and energy are 191 to 194 TFEU, with the objectives having an all-or-nothing implementation strategy due to their interrelated nature. Also, due to the mix of competences outlined above, and thus to avoid implementation issues of Directives and Regulations in this area, the legislative process is important and set out within the Treaty Articles. These are the Articles which are at the heart of the EU's attempt to resolve the trilemma of reliability, sustainability and affordability,⁵¹⁷ as well as reducing climate change and achieving market liberalisation.⁵¹⁸

The following sections analyse the main features of the Treaty Articles outlined and the implications they have for diagonal and supplementary conflicts with other parts of the TFEU relating to free movement, undistorted competition and other elements of state aid. It will also be considered if the Articles currently resolve or may resolve in the future the reliability, sustainability and affordability trilemma.

2.9.1 Article 11 TFEU – Implementation of Environmental Protection within the EU

Article 11 is the first of a series of Treaty Articles which seeks to implement environmental objectives via the institutions of the EU – based on the Commission's competences.⁵¹⁹ Article 11 TFEU states that environmental protection must be integrated into the definition and implementation of the EU's policies and activities, with a view to promoting sustainable development. Article 11 TFEU sets out an all-encompassing duty enshrined in EU primary legislation to integrate environmental protection requirements in the policies and activities of the EU.⁵²⁰ It has been argued that Article 11 TFEU places obligations on the institutions of the EU, entailing direct

⁵¹⁷ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁵¹⁸ Christian Egenhofer, *Integrating Security of Supply, Market Liberalization and Climate Change Appearing in Michael Emerson, Readings in European Security*, (Vol 4 Centre for European Policy Studies, 2007); See also Hazel Nash, 'The European Commission's Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan' (2009) 17 *Journal of Cleaner Production* 496

⁵¹⁹ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁵²⁰ Beate Sjøfjell, 'The Legal Significance of Article 11 TFEU for EU Institutions and member states' in Beate Sjøfjell and Anja Wiesbrock (eds) *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously*, (Routledge 2015; University of Oslo Faculty of Law Research Paper No. 2014-38; Nordic & European Company Law Working Paper No. 14-08)

obligations on all levels: administration, supervision and judicial control.⁵²¹ In compliance with this integration obligation, the EU has published a considerable number of environmental policy documents and pieces of secondary legislation⁵²² in addition to the numerous Directives and Regulations forming the renewable energy regulatory framework. However, the EU has not sought to ensure that all areas of its activity are undertaken through the lens of carbon emission reduction such as fiscal policy, foreign or security policy.

Looking at the EU's use of Article 11 to resolve the 'trilemma'⁵²³ the first consideration is that the EU has traditionally not had a consistent definition of sustainable development and thus has allowed itself, and the member states, a wide discretion in defining policies as sustainable, following the definition used in the Brundtland Report.⁵²⁴ Therefore the EU has sought to integrate the principle of sustainability with the requirements of economic and social development,⁵²⁵ although 'sustainability' in the financial sense is different from that understood in the context of Article 11 TFEU.

Thus, economic growth and perceived needs, such as socially- and culturally-determined patterns of energy use, have created a divergence of understanding across the EU. Hence products and activities considered sustainable in one-member state would not be so labelled in another.⁵²⁶ Also the EU's neoliberal view of trade policy⁵²⁷ has allowed technologies to emerge rather than being driven in an EU champion manner.⁵²⁸

⁵²¹ Ibid

⁵²² For example Directive 92/43 15 May 1992 'the conservation of natural habitats and of wild fauna and flora' OJ L206/7; Directive 2009/125 31 October 2009 'establishing a framework for the setting of eco-design requirements for energy-related products' OJ L285/10; Directive 2008/56 17 June 2008 'establishing a framework for community action on marine water quality in the field of marine environmental policy' OJ L164/19; Directive 2009/147 30 November 2009 'the conservation of wild birds' OJ L20/7; Regulation 2493/2000/EC 7 November 2000 'measures to promote the full integration of the environmental dimension in the development process of developing countries' OJ L288/1

⁵²³ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁵²⁴ EU Regulation (2018) 353 Final 24 May 2018 'Establishment to facilitate a Framework for Sustainable Investment' Explanatory Memorandum 2; See also David Barnhizer, 'Waking From Sustainability's "Impossible Dream": The Decision Making Realities of Business and Government' (2006) 8 Geo. International Environmental Law Review, 595

⁵²⁵ World Commission of Environment and Development (WCED), Our Common Future, Chapter 2: Towards Sustainable Development, From A/42/427. Our Common Future: Report of the World Commission on Environment and Development, known as the Brundtland Report (available at <http://www.un-documents.net/ocf-02.htm#IV>)

⁵²⁶ K van Hende, 'Internal and External Policy and Legal Challenges in the EU in Achieving a Sustainable, Competitive and Secure Internal Energy Market and the Integration of Electricity from Renewable Energy Sources into the Energy system' (2011) 2 Nordic Environmental Law Journal, 53

⁵²⁷ Ferdi De Ville and Jan Orbie, 'The European Commission's Neoliberal Trade Discourse since the Crisis: Legitimizing Continuity through Subtle Discursive Change' (2014) 16(1) British Journal of Politics and International Relations, 149

⁵²⁸ Per Ove Eikeland and Ingvild Andreassen Sæverud, 'Market Diffusion of New Renewable Energy in Europe: Explaining Front-runner and Laggard Positions' (2007) 18(1) Energy and Environment, 13

Therefore, in order to avoid the traditional conflicts between the different implementations of the sustainable development principle by member states, the EU, under the provisions of Article 114 TFEU (Approximation of Laws), issued a Regulation setting out a Framework for Sustainable Investment.⁵²⁹ However, this has done little to resolve the reliability and affordability aspects of the trilemma⁵³⁰ as diversity of technologies, and thus manufacturers involved, has not historically created economies of scale which would have reduced capital costs (See Section 2.7).

The integration principle contained in Article 11 TFEU, is key to extending the legal role of Article 191 [Environment] TFEU and the renewable aspects of Article 194 [Energy] TFEU to other policy areas covered by the Treaty. It has integrated (as a minimum) the areas of public health, agriculture and the environment, by extending its binding policy principles to have legal functions in constraining and interpreting measures in these areas.⁵³¹

The integration principle's (Article 11 TFEU the Court referring to Article 6 TEC) scope was expanded by the CJEU in the *Environmental Crime*⁵³² case, where it was held that the EU's institutions should have introduced measures under Articles 191 and 192 TFEU to allow the enforcement of environmental requirements via criminal action, despite criminal action traditionally being left to member states.⁵³³ This position being reached on the basis that environmental protection was a fundamental objective of the EU.⁵³⁴

Article 11 only addresses the EU and its institutions and does not seem to place the same obligations on member states. However, the Article is still potentially highly persuasive in the interpretation and application of EU law, the justification for member state initiatives that restrict free movement, entailing a possible duty to act to promote the EU's overriding objective⁵³⁵ to reduce carbon emissions and perhaps also indicating a coming general principle of sustainable development at member

⁵²⁹ EU Regulation (2018/353/EC) 'Establishment to facilitate a Framework for Sustainable Investment'

⁵³⁰ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁵³¹ Case T-141/00 *Artegoda v Commission* ECLI:EU:T:2002:283

⁵³² Case 176/03 *Commission v Council* (Ship-Source Pollution) ECLI:EU:C:2005:542

⁵³³ *Ibid*, para 42 to 48

⁵³⁴ *Ibid*, para 41

⁵³⁵ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

state level, even though there is minimal specificity regarding the definition of sustainable development in the Treaty.⁵³⁶

Although the Treaty does not place an integration obligation on the member states using a Regulation⁵³⁷ structure to publish the sustainable investment framework⁵³⁸ therefore means it is directly effective on member states and thus will enhance harmonisation of the criteria for declaring products and investments as sustainable.⁵³⁹ Being directly effective will reduce the differences and the complexity of rules across member states.⁵⁴⁰ However, this may cause differences in economic outcome for different member states as the C&C style of rules contained in the Framework for Sustainable Investment Regulation are unlikely to have the same cost of implementation across all EU member states.⁵⁴¹

2.9.2 Energy Network Requirements – Article 170 to 172 TFEU

Whilst Article 11 places general obligations to implement and integrate the need to reduce carbon emissions, Articles 170 to 172 TFEU are operative and place an obligation on the EU to contribute to the establishment and development of trans-European networks in the areas of transport, telecommunications and energy infrastructures (the ‘network provisions’).⁵⁴² The network provisions state their aim is to link islanded, landlocked and peripheral regions with the central regions of the EU to enhance the functioning of competitive markets.⁵⁴³ Additionally the development of energy networks is stated as a means to increase energy security⁵⁴⁴

⁵³⁶ Sjøfjell, Beate ‘The Legal Significance of Article 11 TFEU for EU Institutions and Member States’ in Beate Sjøfjell and Anja Wiesbrock (eds) *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously*, (Routledge 2015; University of Oslo Faculty of Law Research Paper No. 2014-38; Nordic & European Company Law Working Paper No. 14-08)

⁵³⁷ Regulations are directly effective. As Article 288 TFEU states that Regulations “shall be binding in its entirety and directly applicable in all Member States” the CJEU has confirmed that they are directly effective stating ‘Owing to their very nature and their place in the system of sources of Union law, regulations operate to confer rights on individuals which the national courts have a duty to protect’ Case C-253/00 *Antonio Muñoz y Cia SA and Superior Fruiticola SA v Frumar Ltd and Redbridge Produce Marketing* ECLI:EU:C:2002:497, para 27; Also if a specific right is conferred therefore a regulation can be both vertically and horizontally directly effective. All regulations are directly effective – Case C-43/71 *Politi s.a.s. v Italian Ministry for Finance* ECLI:EU:C:1971:122

⁵³⁸ EU Regulation (2018) 353 Final 24 May 2018 ‘Establishment to facilitate a Framework for Sustainable Investment’

⁵³⁹ Peter Cameron, ‘The Internal Energy Market – Redefining Objectives’ Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 5

⁵⁴⁰ Julian Nowag, ‘The Environmental Integration Obligation of Article 11 TFEU’ in Julian Nowag (ed) *Environmental Integration in Competition and Free-Movement Laws* (Oxford University Press, 2017)

⁵⁴¹ Julian Nowag, ‘The Environmental Integration Obligation of Article 11 TFEU’ in Julian Nowag (ed) *Environmental Integration in Competition and Free-Movement Laws* (Oxford University Press, 2017); See Also Claire Dupont and Sebastian Oberthür ‘Insufficient Climate Policy Integration in EU Energy Policy: The Importance of the Long-Term Perspective’ (2012) 8 *Journal of Contemporary European Research*, 228; See also Camilla Adelle and Duncan Russel Climate Policy Integration: A Case of Déjà Vu? (2013) 23,1 *Environmental Policy and Governance*, 1

⁵⁴² Article 170 (1) TFEU

⁵⁴³ Article 170 (2) TFEU

⁵⁴⁴ COM(2014) 330 28 May 2014 ‘European Energy Security Strategy’; See also Directive 2005/89/EC 18 January 2006 ‘measures to safeguard security of electricity supply and infrastructure investment’ OJ L 33/4

(a key justification for the development of renewable energy within the EU)⁵⁴⁵ and network resilience.⁵⁴⁶

In making these network investments⁵⁴⁷ it could be argued that the electricity transmission systems across the EU would allow a more optimal exploitation of the best locations for renewable electricity facilities, which is not simply an economic justification⁵⁴⁸ but also seeks to implement the overriding objective⁵⁴⁹ of carbon emissions reduction by allowing sites with optimal wind and solar resources to be developed. Moreover, they assist in the resolution of the 'trilemma',⁵⁵⁰ in that additional transmission capacity increases the reliability of the network and as such should allow renewable electricity from the lowest cost producers to be transmitted to consumers across the EU.

Thus, as the cost effectiveness of renewable generation is enhanced, due to exploitation of optimal sites and capital cost reductions,⁵⁵¹ a larger number of sites will become economically viable and hence the exploitation of renewables will increase without the need for high levels of revenue support via feed-in tariffs. However, network infrastructure investment will be needed in abundance.⁵⁵²

There is a growing recognition that modern demand patterns and the expansion of renewable energy sources, raises the need to reshape the electricity networks,⁵⁵³ as the networks generally have a topology to transmit energy from the sources of the 1960s and 1970s to end-users of that time.⁵⁵⁴ In confirming this point, the 2014 Guidelines on State Aid for Renewables state that appropriate

⁵⁴⁵ European Commission COM (2014) 330 'European Energy Security Strategy'; see also European Commission 'The European Union Leading In Renewables' Dec 2015, 7; see also Dejan Đorđević and Milan Veselinović 'The Policy of Renewable Energy Sources in the Function of the Environmental Protection in the EU' (2015) 53 (3) Economic Themes 343

⁵⁴⁶ Jonathan Gaventia, Nick Mabey, Sandrine Dixonde-Cleve, Helen Spence-Jackson and Dries Acke, 'EU Energy Union Assessment 2015 –Towards a Resilient Energy Union with a Forward-Looking Climate Policy' Briefing Paper November 2015

⁵⁴⁷ Article 171 (1) TFEU - which will be undertaken largely by member states and market operators – with EU contributing via the Cohesion Fund set up pursuant to Article 177 TFEU

⁵⁴⁸ Nicholas Stern, 'Europe can Grow by Unleashing a Low Carbon Economy' (2012) Social Europe Journal <http://www.social-europe.eu/2012/05/22821/> accessed on 16 September 2017

⁵⁴⁹ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

⁵⁵⁰ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014) See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁵⁵¹ The Horns 2 Project was found to bid 57.5£/MWh in the 2017 UK Renewable Auction – a price comparable with coal and gas generation, however, this is very much a future price and not the cost derived from operational wind farms - Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

⁵⁵² Christof van Agt 'The energy infrastructure challenge' in Katinka Barysch (ed) Green, safe, cheap: Where next for EU energy policy? (Centre for European Reform, 2011)

⁵⁵³ COM(2011)112 final 'A roadmap for moving to a competitive low carbon economy'; COM(2011) 571 final 'Roadmap to a Resource Efficient Europe'

⁵⁵⁴ SWD(2014) 330 'In-depth study of European Energy Security'

infrastructure is a precondition for a functioning energy market, enhancing economic development and objectives of common interest.⁵⁵⁵

The need for network interconnection has been recognised by the EU as it has stated that at least 15% of generation capacity in adjacent member states is to be represented as transmission network capacity between them by 2030.⁵⁵⁶ This level of interconnection will require an investment in the region of €180 bn, leading to a €40-70 bn per annum reduction in generation costs.⁵⁵⁷ As an example, the UK has five new schemes with a capacity of 5,700MW which have been confirmed as receiving state support,⁵⁵⁸ in addition to its existing 4,000MW of interconnection, giving a total interconnection capacity of circa 9,700MW or 16% of peak demand.⁵⁵⁹

An example of the Commission's view that interconnection capacity should be made fully available can be seen in its investigation of the Tennet network restriction between Denmark and Germany. If proven, the restriction will be regarded as an abuse of a dominant market position (Article 102 TFEU), as it would amount to discrimination against non-German electricity producers and a segmentation of the Single Market for energy.⁵⁶⁰

Despite the stated importance⁵⁶¹ of the need for network interconnection the failure of the CJEU to take such considerations into account in the *Ålands Vindkraft*⁵⁶² case is a major omission and is discussed in Section 3.5.2.

2.9.3 Energy & Environment - Articles 191 to 194 TFEU

The core of the energy and environmental Treaty Articles are found in Articles 191 to 194 TFEU. These Articles place competency on the institutions of the EU and member states for different aspects of the implementation of the provisions related

⁵⁵⁵ Communication from the Commission 'Guidelines on State aid for environmental protection and energy 2014-2020' - (2014/C 200/01), para 202 – aid granted for objectives of the common interest is compatible with Article 107(3)(c) Case T-177/07 *Mediaset v Commission* ECLI:EU:T:2010:233 para 125

⁵⁵⁶ COM(2017) 718 final 23 November 2017 'Communication on strengthening Europe's energy networks' Article 4.2

⁵⁵⁷ Booz & Co 'Study on the benefits of an integrated European energy market' [2013] available at https://ec.europa.eu/energy/sites/ener/files/documents/20130902_energy_integration_benefits.pdf accessed 28 October 2017

⁵⁵⁸ NSL (Norway) 1,400MW, FAB Link (France) 1,400MW, IFA2 (France) 1,000MW, Viking (Denmark) 1,400MW and Greenlink (Ireland) 500MW - https://www.ofgem.gov.uk/system/files/docs/2018/10/w1_fpa_update_letter.pdf accessed 3 October 2018

⁵⁵⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/736152/Ch5.pdf accessed 3 October 2018

⁵⁶⁰ IP/18/2122 Commission Investigation TenneT TSO GmbH's – 19 March 2018 available at http://europa.eu/rapid/press-release_IP-18-2122_en.htm accessed 4 April 2018

⁵⁶¹ Raphael Heffron and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

⁵⁶² Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

to environmental protection, energy efficiency and the development of renewable energy.

The drafting of the Articles allows environmental regulation to take either a C&C (e.g. Effort Sharing Decision)⁵⁶³ or market based (e.g. European Emissions Trading Scheme)⁵⁶⁴ form as is applicable to the circumstance.⁵⁶⁵

Article 191 TFEU states that the EU shall contribute to the preservation, protection and improvement of the quality of the environment, combat climate change, the protection of human health, the prudent and rational utilisation of natural resources and the promotion of measures internationally (Article 191(4)).⁵⁶⁶ It being stated in *Re Peralta*⁵⁶⁷ that whilst Article 191 TFEU defines the general environmental objectives of the EU, the specific implementation is contained in the associated Directives and Regulations.

The necessary powers and competence to pursue the Article 191 TFEU (environmental) objectives is conferred upon the institutions of the EU (in effect the Commission) by Article 192 (1) and (2) TFEU.⁵⁶⁸ Article 192 TFEU, sets out the general frameworks for environmental legislation in the EU and touches upon energy issues (*lex specialis*).⁵⁶⁹

As member states are reluctant to relinquish the decision-making power over energy policy,⁵⁷⁰ Article 192(2)(c) TFEU, states that '*measures significantly affecting a Member State's choice between different energy sources and the general structure of its energy supply*' require unanimity of member states.

⁵⁶³ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

⁵⁶⁴ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

⁵⁶⁵ David Driesen, Robert Adler and Kirstin Engel *Environmental Law: Conceptual and Pragmatic Approach* (Aspen, 2011), 267

⁵⁶⁶ Opinion C-2/00 Cartagena Protocol ECLI:EU:C:2001:664, para 43-44; Thomas Delreux, 'The EU as an Actor in global environmental politics' in Andrew Jordan and Camilla Adelle (eds), *Environmental Policy in the European Union: Contexts, Actors and Policy Dynamics* (3rd edn, Earthscan 2012); Catherine Barnard and Steve Peers *European Union Law* (Oxford University Press, 2014)

⁵⁶⁷ Case C-379/92, *Re Peralta* ECLI:EU:C:1994:296, para 57

⁵⁶⁸ Alexander Proelss 'The Scope of the EU's Competences on the Field of the Environment' In: Yumiko Nakanishi (ed) *Contemporary Issues in Environmental Law. Environmental Protection in the European Union*, vol 5 (Springer, 2016)

⁵⁶⁹ These objectives are given in Article 191 TFEU. The original environmental competence article was article 130 of the European Economic Community Treaty, introduced by the Single European Act in 1987. The Maastricht Treaty amended this article and introduced qualified majority voting as a general rule for environmental legislation.

⁵⁷⁰ Jutta Brunnée 'Sources of International Environmental Law: Interactional Law' in Samantha Besson and Jean d'Aspremont (eds) *The Oxford Handbook of the Sources of International Law* (Oxford University Press, 2017)

In addition, Article 194(1) TFEU seeks to ensure the functioning of the energy market (Electricity Market Directive),⁵⁷¹ energy security⁵⁷² (Electricity Security Directive)⁵⁷³ promote energy efficiency (Energy Efficiency Directive)⁵⁷⁴ and the development of renewable energy production (Renewable Energy Directive)⁵⁷⁵ and promote the interconnection of energy networks. Therefore, as outlined, Article 194(1) can be said to the Treaty basis for much of the renewable electricity regulatory framework.

The obvious outcome of the provisions of Articles 191 and 194 TFEU is the conferral of the competence⁵⁷⁶ to put in place measures which change the generation portfolio in each member state, by increasing the installed capacity based on renewables. The Articles also facilitate how property rights are conferred over emissions, such that they can be traded within the EU-ETS.

The judgment in *Poland v Commission* (2013)⁵⁷⁷ gives an indication of the potential for the CJEU to grant the Commission a wide discretion in the application of its environmental competences. Poland argued the assumption, outlined in the Commission Decision,⁵⁷⁸ on the rules for the harmonised free allocation of emission allowances was discriminatory, as it assigned free emission allowances on the basis of a gas fuelled⁵⁷⁹ combined cycle plant (CCGT)⁵⁸⁰ rather than on the basis of the

⁵⁷¹ Council Directive 2009/72/EC 13 July 2009 Concerning common rules for the internal market in electricity OJ L 211/55 (Electricity Markets Directive) available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0072&from=en>

⁵⁷² Penelope Crossley, 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁵⁷³ EU Directive 2005/89/EC 'Measures to safeguard security of electricity supply and infrastructure investment' OJ L 33/22

⁵⁷⁴ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

⁵⁷⁵ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁵⁷⁶ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁵⁷⁷ Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

⁵⁷⁸ Commission Decision 2011/278/EU determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament of the Council OJ 2011 L 130, 1

⁵⁷⁹ Article 10a(6) of the Emissions Trading Directive requires that product benchmarks correspond to the most efficient methods of electricity production

⁵⁸⁰ A combined cycle gas turbine generating plant (CCGT) uses waste heat from the gas turbine to run a steam turbine to form a combined cycle both of which are used to provide motive force for the electricity generator increasing the efficiency from circa 35% for coal to 55% to 62% for CCGT -

http://www.powerplantccs.com/ref/glos/combined_cycle_gas_turbine_ccgt_.html & <https://www.gepower.com/about/insights/articles/2016/04/power-plant-efficiency-record> accessed 19 April 2018

actual plant.⁵⁸¹ The Decision thus dis-advantaging member states where coal predominates.⁵⁸² Poland stated that the Commission did not have the competence to decide energy matters, as energy was a shared competence in accordance with Article 4 TEU. The Court held that the Decision⁵⁸³ was environmental and not energy related and as such the Commission's competence had not been exceeded. In line with its decision in *Parliament v Council* (2012),⁵⁸⁴ the Court explained that there is no reason to suppose that the second sub-paragraph of Article 194(2)⁵⁸⁵ TFEU establishes a general prohibition on the Commission deciding matters in the environment even when this relates to an energy asset.

Articles 191 to 194 TFEU progress the resolution of the 'trilemma',⁵⁸⁶ by putting in place a framework that seeks to protect and improve the environment, reduce carbon emissions, support renewable energy, facilitate the formation of a carbon trading market and promote energy efficiency, all of which can be seen to satisfy the need for sustainability. The Articles also seek to enhance energy security and the interconnectedness of energy networks, both of which will enhance reliability. Lastly the support for renewable energy, whilst initially allowing the putting in place of 'support schemes' which paid a premium above the wholesale market price to renewable electricity facilities has allowed the technology to mature such that current projects are being built at prices close the those of conventional generation (See Section 2.7 and the UK's Hornsea 3 Project).⁵⁸⁷

The detailed analysis of the individual Directives in Section 2.10 will show how effective the EU has been in the implementation of these concepts and the resolution of the trilemma.

It should be noted that Article 194(2) states that the rights in Article 194(1) (the choice of energy sources or the general structure of energy supply) apply

⁵⁸¹ Ibid. para. 10

⁵⁸² Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113. para. 24

⁵⁸³ Commission Decision 2011/278/EU determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament of the Council OJ 2011 L 130, 1

⁵⁸⁴ Case C-490/10 *Parliament v Council* ECLI:EU:C:2012:525

⁵⁸⁵ Article 194(2) TFEU – 'Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph 1. Such measures shall be adopted after consultation of the Economic and Social Committee and the Committee of the Regions' For ease of reference Article 194 (1) state 'In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks.

⁵⁸⁶ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapter to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁵⁸⁷ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

provided they do not infringe other parts of EU law and are therefore conditional.⁵⁸⁸ This is a point that is referred to in the case law analysis in Chapter 3.

The combination of Articles 191 to 194 TFEU has led to the implementation of a considerable number of Directives and Regulations to manage energy and environmental issues within the EU. The Directives which relate to the renewable energy regulatory framework are outlined below.⁵⁸⁹

2.10 Directives forming the Renewables Regulatory Framework

The EU renewable energy regulatory framework is composed of a complex series of Directives and Regulations. The regulatory framework is composed of market-based solutions, such as the European Emissions Trading Directive⁵⁹⁰ as well as C&C based directives such as the Renewable Energy Directive.⁵⁹¹ As has been explained above, the EU and the member states have differing competences⁵⁹² with regards to energy and environmental matters. Therefore, the analysis of the regulatory framework is undertaken using both the competence related to the overall Directive and the style of directive (C&C or market based) and competence basis as outlined in the table below. The analysis will also consider whether either of these criteria produces directives with an increased number of areas of conflict between the directive and principles of EU law – free movement, undistorted competition and other elements of state aid. The table below sets out the categorisation of each of the main Directives contained within the renewable electricity regulatory framework, illustrating that the clear majority of Directives are within the EU's competence and are C&C in style and hence market forces are only brought to bear in relation to carbon trading.

⁵⁸⁸ Angus Johnston and Eva van der Marel, 'Ad Lucem? Interpreting the New EU Energy provision and in particular the Meaning of Article 194 (2) TFEU' (2013) *European Energy and Environmental Law Review*, 181; See Also H Schmitt von Sydow, 'The Dancing Procession of Lisbon: Legal Bases for European Energy Policy' (2011) 1 *European Energy Journal*, 33

⁵⁸⁹ Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

⁵⁹⁰ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

⁵⁹¹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁵⁹² Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

Exclusive EU Competence + Market	Exclusive EU Competence + C&C
Emissions Trading Directive ⁵⁹³	Effort Sharing Decision ⁵⁹⁴ Industrial Emissions Directive ⁵⁹⁵ Energy Efficiency Directive ⁵⁹⁶ Carbon Capture & Storage Directive ⁵⁹⁷
Shared Competence + Market	Shared Competence + C&C
Electricity Market Directive ⁵⁹⁸	Renewable Energy Directive ⁵⁹⁹

2.10.1 EU Emissions Trading Scheme (EU-ETS)⁶⁰⁰ – Directive 2003/87 & 2009/39

The trading of emissions rights promises the achievement of a pre-defined environmental outcome at least cost. All assumptions being seen to hold good, it would be an ‘optimal’ carbon emissions policy instrument.⁶⁰¹

The EU-ETS is stated to be the ‘*jewel in the crown*’⁶⁰² and ‘*one of the most exciting and important initiatives ever taken to limit the carbon emissions*’ thus able to ‘*provide the cornerstone for an eventual global trading regime*’.⁶⁰³ The EU-ETS is said to efficiently price carbon emission reductions,⁶⁰⁴ thus the emissions abatement

⁵⁹³ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 ‘To improve and extend the carbon emission trading scheme of the Community’ OJ L140/63

⁵⁹⁴ Commission Decision No 406/2009/EC 23 April 2009 Reduction in carbon emissions to meet the Community’s carbon emission reduction commitments up to 2020’ (Effort Sharing Decision) OJ L 40/136

⁵⁹⁵ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

⁵⁹⁶ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

⁵⁹⁷ Council Directive 2009/31/EC 23 April 2009 on the geological storage of carbon dioxide OJ L140/114

⁵⁹⁸ Council Directive 2009/72/EC 13 July 2009 Concerning common rules for the internal market in electricity OJ L 211/55 (Electricity Markets Directive) available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0072&from=en>

⁵⁹⁹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁶⁰⁰ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 ‘To improve and extend the carbon emission trading scheme of the Community’ OJ L140/63

⁶⁰¹ Benjamin Görlach ‘Emissions Trading in the Climate Policy Instrument Mix: understanding and Managing Interactions with other Policy Instruments’, (2014) 25(34) Energy & Environment 733-49

⁶⁰² Jørgen Wettestad, ‘The Making of the 2003 EU Emissions Trading Directive: An Ultra-Quick Process due to Entrepreneurial Proficiency?’ (2005) 5(1) Global Environmental Politics, 1, 17; See Also Jon Birger Skjærseth and Jørgen Wettestad ‘Making the EU Emissions Trading System: The European Commission as an entrepreneurial epistemic leader’ (2010) 20(2) Global Environmental Change, 314; Also Stavros Dimas, ‘Climate Change – International and EU Action’ (31 October 2008) Speech of the EU Environment Commissioner at the Climate Change Conference in Prague. Available at: http://europa.eu/rapid/press-release_SPEECH-07-199_en.pdf Accessed 21 March 2017

⁶⁰³ Denny Ellerman, Frank Convery and Christian de Perthuis, *Pricing Carbon: The European Union Emissions Trading Scheme* (Cambridge University Press, 2010)

⁶⁰⁴ Case C-41/11 *Inter-Environnement Wallonie and Terre wallonne* ECLI:EU:C:2012:103, para 61 ; Case C-127/07 *Arcelor Atlantique and Lorraine* ECLI:EU:C:2008:728, para 31

is achieved at relatively low cost.⁶⁰⁵ The emissions reduction being achieved with no negative effect on the overall economy and minimal effects on energy-intensive sectors (e.g. steel and paper),⁶⁰⁶ although this result is more likely to be derived from the low cost of carbon allowance on the emissions trading hub due to over allocation of allowance by member states than market design – explained further below.⁶⁰⁷

In the immediately post-Kyoto period several carbon pricing systems emerged,⁶⁰⁸ however, only a few have survived,⁶⁰⁹ with the EU-ETS being regarded as one of the most important carbon markets globally.⁶¹⁰ The failure of these trading systems is said⁶¹¹ to increase ‘carbon leakage’ which was a matter of concern for respondents within the empirical research.

The Emissions Trading Directive (established in accordance with Article 191(1) TFEU) and the EU emissions trading scheme which is set up in accordance with its provisions provides a market mechanism to determine a harmonised price for carbon emissions across the EU. The Emissions Trading Directive is within the environmental competence of the Commission (See Section 2.9.3 *Poland v Commission* (2013)).⁶¹² This market mechanism means that coal and gas generation have a simple means of internalising the costs of carbon emissions and thus reducing the price differential between coal and gas generation and renewable electricity generating facilities. The reduction in the differential means that renewable support schemes⁶¹³ can be reduced in value and as such the potential for renewable

⁶⁰⁵ Ibid, 191; See also European Commission, ‘Climate change: Progress report shows EU on track to meet or over-achieve Kyoto emissions target,’ press release, Brussels, November 12, 2009, available at europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1703&format=HTML&aged=0&language=EN&guiLanguage=en accessed 17 January 2017

⁶⁰⁶ Christian Egenhofer, Monica Alessi, Anton Georgiev, and Noriko Fujiwara, ‘The EU Emissions Trading System and Climate Policy towards 2050: Real incentives to reduce emissions and drive innovation?’ CEPS Special Report, January 2011, available at papers.ssrn.com/sol3/papers.cfm?abstract_id=1756736 accessed 17 January 2018 See also ‘Emissions from the EU ETS down 3% in 2008’ New Carbon Finance, 16 February 2009, press release, available at bnf.com/Downloads/pressreleases/38/pdf accessed 17 January 2018; Frank Watson, ‘EC CO2 data shows that EU carbon trading is working: analysts’ (2011) Platts, available at platts.com/NewsFeature/2011/emissionsdata/index; See also Jan Abrell, Anta Ndoye Faye, and Georg Zachmann, ‘Assessing the impact of the EU ETS using firm level data’ (2011), available at bruegel.org/publications/publication-detail/publication/579-assessing-the-impact-of-the-eu-ets-using-firm-level-data/ accessed 17 January 2018

⁶⁰⁷ Johanna Arlinghaus, Luisa Dressler, Florans Flues, Michelle Harding and Kurt van Dender *Effective Carbon Rates Pricing CO₂ through Taxes and Emissions Trading Systems* (OECD Publishing, 2016) 15

⁶⁰⁸ Anja Kollmuss, Helge Zink and Clifford Polycarp, ‘Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards’ [2008] Stockholm Environmental Institute Working Paper

⁶⁰⁹ Jessica Green, ‘Order out of Chaos: Public and Private Rules for Managing Carbon’ (2013) 13(2) *Global Environmental Politics* 2

⁶¹⁰ Sabine Fuss, Christian Flachsland, Nicolas Koch, Ulrike Kornek, Brigitte Knopf and Ottmar Edenhofer, ‘A Framework for Assessing the Performance of Cap-and-Trade Systems: Insights from the European Union Emissions Trading System’ (2018) 12(2) *Review of Environmental Economics and Policy* 220; See Also A Denny Ellerman, Claudio Marcantonini and Aleksandar Zaklan, ‘The European Union Emissions Trading System: Ten Years and Counting’ (2016) 10(1) *Review of Environmental Economics and Policy* 89

⁶¹¹ Kati Kulovesi, ‘EU Emissions Trading Scheme: preventing carbon leakage before and after the Paris Agreement’ in Rafael Leal-Arcas and Jan Wouters (eds.) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁶¹² Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

⁶¹³ ‘support scheme’ means ‘any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or

electricity facilities to be developed without the need for renewable support schemes is brought closer. This is also accelerated by reducing capital costs of renewable generation.⁶¹⁴

The EU-ETS fulfils the EU's Kyoto Protocol obligations, with minimal economic effect⁶¹⁵ (emission trading being a cost-effective means of environmental regulation since the 1960s)⁶¹⁶ and covers 45% to 50% of the carbon emissions in the EU.⁶¹⁷

To initiate a trading mechanism, the ability to emit certain pollutants must be turned into a 'right' and such 'right' must be tradeable.⁶¹⁸ Should an undertaking not produce a volume of actual emissions large enough to require the emissions rights (with the EU known as 'allowances') that it holds, it may sell those rights to an organisation with emissions in excess of the rights it holds. Generally emissions trading schemes fall into one of three main categories

- Cap & trade:⁶¹⁹ A cap on emissions is allocated to emitters (either for free or at a set price) for a time. As the time ends, those with lower emissions will sell their excess credits to those needing to purchase the credits or they will have to pay the cash-out⁶²⁰ price for exceeding their emission credits.
- Performance standard emissions trading:⁶²¹ This refers to the trading of emission credits based on a performance standard for the type of industry the entity is deemed to be within. The advantage of this scheme compared to 'cap and trade' is that emission levels are correlated to energy consumed and are not simply static overtime.

otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁶¹⁴ The Hornsea 2 Project was found to bid 57.5£/MWh in the 2017 UK Renewable Auction – a price comparable with coal and gas generation, however, this is very much a future price and not the cost derived from operational wind farms - Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

⁶¹⁵ Preamble, para 5 of Emission Trading Directive; see also Article 1 of Emissions Trading Directive related to economic efficiency of operation; See Also David Driesen, Robert Adler and Kirstin Engel *Environmental Law: Conceptual and Pragmatic Approach* (Aspen, 2011), 267

⁶¹⁶ Ronald Coase, 'The problem of social costs' (1960), 3 Journal of Law & Economics, 1

⁶¹⁷ European Commission 'Analysis of the use of Auction Revenues by the member states' (March 2017), 6; see also Tim Laing, Misato Sato, Michael Grubb and Claudia Comberti, 'Assessing the effectiveness of the EU Emissions Trading Scheme' (January 2013) Grantham Research Institute on Climate Change and the Environment Working Paper No. 106

⁶¹⁸ Ronald Coase, 'The Problem of Social Cost' (1960) 3 Journal of Law and Economics 1; See also Thomas Tietenberg, *Emissions Trading: Principles and Practice* (2nd Ed, Earthscan, 2006)

⁶¹⁹ Article 6 Emission Trading Directive - EC Directive 2003/87/EC 13 October 2003 'A scheme for carbon emission allowance trading within the Community' OJ L275/32 (Emissions Trading Directive)

⁶²⁰ Cash-out prices are designed to provide market participants with commercial incentives to balance their contractual and physical positions and therefore avoid exposure to cash out price. Hence if actual emissions were higher than the allowances held by an undertaking and it was not able to purchase additional allowances then it would have to pay the cash-out price. - <https://www.ofgem.gov.uk/gas/wholesale-market/market-efficiency-review-and-reform/cash-out-arrangements> accessed 31 August 2018

⁶²¹ Rabah Amir, Adriana Gama and Katarzyna Werner 'On Environmental Regulation of Oligopoly Markets: Emission versus Performance Standards' (2018) 70(1) Environmental Resource Economics, 147

- Project based emissions credit trading.⁶²² Here trading of credits is based on the entitlement gained by an individual project. Emission credits available for trading are gained by lowering actual emissions against project baseline allowances. This is a more sophisticated form of cap and trade.

The EU-ETS is a hybrid of the cap and trade and project-based trading, with performance standards included for some schemes.⁶²³

The EU-ETS has been amended several times over the years to include different market sectors, including aviation (although the enforcement of this element has been delayed).⁶²⁴

The EU emission trading scheme is divided into 4 phases (i) Phase 1 2005-2007, (ii) Phase 2: 2008-2012, (iii) Phase 3: 2013-2020 and (iv) Phase 4: 2021-2028.

Phase 1 was an initial phase to test the system, very much 'learning by doing'.⁶²⁵ EU member states were free to allocate emission allowances to installations within their territory in accordance with national allocation plans (NAPs). Almost all allowances were allocated free on the basis of historic emission patterns (so called 'grandfathering'),⁶²⁶ resulting in allowances exceeding emissions across the EU by broadly 4%.⁶²⁷ With nearly 60% of the allowances being allocated to the electricity sector there was a reported potential for windfall profits.⁶²⁸ Such profits were not realised within Phase 1 by generating companies due to (i) the expectation that emissions would be used to determine future allowances, (ii) voluntary

⁶²² Carolyn Fischer 'Project-Based Mechanisms for Emissions Reductions: Balancing Trade-offs with Baselines' (2004) Discussion Paper, Resources for the Future

⁶²³ E Woerdman and A Nentjes, 'The European Union Emissions Trading Hybrid: Inefficiencies in the Revised Rules After 2013', University of Groningen working paper series

⁶²⁴ 30 April 2014 - Consolidated version of Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for carbon emission allowance trading within the Community and amending Council Directive 96/61/EC; 23 April 2009 - Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the carbon emission allowance trading scheme of the Community; 19 November 2008 - Directive 2008/101/EC of the European Parliament and of the Council amending Directive 2003/87/EC so as to include aviation activities in the scheme for carbon emission allowance trading within the Community; 27 October 2004 - Directive 2004/101/EC of the European Parliament and of the Council amending Directive 2003/87/EC establishing a scheme for carbon emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms

⁶²⁵ Nick Feinstein, 'Learning from Past Mistakes: Future Regulation to Prevent Greenwashing' (2013) 40(1) Boston College Environmental Affairs Law Review, 229

⁶²⁶ The allocation for free of EU-ETS allowance on the basis of historic emission patterns. With the view that prior emissions increased entitlements to future emissions allowances - Carl Knight, 'What is grandfathering?' (2013) 22(3) Environmental Politics, 410 See Also Mehdy Abbas Khayli 'The Roles Played by the Polluter Pays Principle in state aid Law' (2013) 6 Jean Monnet Working Paper Series available at www.tradeenvironment.eu accessed 28 October 2017

⁶²⁷ D Ellerman and B Buchner, 'Over-allocation or Abatement? A Preliminary Analysis of the EU ETS based on the 2005-06 Emissions Data', (2008) 41(2) Environmental & Resource Economics 267

⁶²⁸ Jos Sijm, Karsten Neuhoff and Yihsu Chen, 'CO₂ Cost Pass Through and Windfall Profits in the Power Sector' (May 2006) 1 Energy research Centre of the Netherlands & Energy Policy Research Group 0617, Cambridge University Press; See Also Michael Grubb and Karsten Neuhoff, *Emissions Trading & Competitiveness*, (Taylor & Francis, 2006)

agreements or the threat of regulatory intervention relating to windfall profits and (iii) market imperfections and the lack of transparency within the carbon market.⁶²⁹

Since Phase 2 was concurrent with the first commitment period of the Kyoto Protocol, the EU imposed a tighter emissions cap by reducing the total volume of allowances by 6.5% compared to 2005. The emission trading scheme was meant to offer cost-effective mitigation options to businesses. However, with the volume of emissions credits in the system and the economic crisis of 2008, which reduced actual emissions, a large surplus of emissions credits resulted, causing a fall of the price from €30 to less than €7.⁶³⁰ Put simply, the cost of emissions was just too low to be an effective inducement to justify investment in emissions reducing equipment or changing operational processes.⁶³¹

The third phase of the emissions trading scheme was initiated with an amending Directive (2009/29/EC).⁶³² The emissions trading scheme was extensively harmonised across the EU, with all fundamental decisions made centrally.⁶³³ The most significant change in the third trading phase is the reduction in free allowances from 80% in 2013 to 30% by 2020.⁶³⁴

The scheme, however, has not operated as planned and in the most part has failed to incentivise the promotion of emissions reduction and the development of renewable electricity facilities as a means of resolving the electricity 'trilemma',⁶³⁵ due to the low price for carbon emissions which has occurred as a result of the large number of emission allowances available.⁶³⁶ The system used to allocate emission allowances became politically motivated with the NAP generated by each member state⁶³⁷ being seen as complex, dysfunctional, not transparent and thus creating distortions to competition.⁶³⁸

Subsequently the Commission sought to reduce the over allocation⁶³⁹ of free allowances in circulation during the second trading period (2008-12). The

⁶²⁹ Jos Sijm, Stefan Bakker, Yishu Chen, Henk Harmsen, and Wietze Lise, 'CO₂ price dynamics: the implications of EU emissions trading for the price of electricity' (2005) ECN-C--05-081, Energy Research Centre of the Netherlands

⁶³⁰ <http://markets.businessinsider.com/commodities/co2-emissionsrechte> accessed 17 January 2018

⁶³¹ Johanna Arlinghaus, Luisa Dressler, Florans Flues, Michelle Harding and Kurt van Dender *Effective Carbon Rates Pricing CO₂ through Taxes and Emissions Trading Systems* (OECD Publishing, 2016) 15

⁶³² European Directive 23 April 2009, 'Amending Directive 2003/87/EC so as to improve and extend the carbon emission allowance trading scheme' OJ L 140/71

⁶³³ Ibid, Article 9(2)

⁶³⁴ Ibid, Preamble Para 21

⁶³⁵ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁶³⁶ Dieter Helm, 'The European framework for energy and climate policies' (2014) 64 *Energy Policy* 29

⁶³⁷ Article 9 of Emission Trading Directive

⁶³⁸ Sanja Bogojević, 'The EU ETS Directive Revised: Yet Another Stepping Stone' (2009) 11(4) *Environmental Law Review*

⁶³⁹ Sara Segura, Luis Ferruz, Pilar Gargallo and Manuel Salvador 'Environmental versus economic performance in the EU ETS from the point of view of policy makers: A statistical analysis based on copulas' (2018) 176 *Journal of Cleaner Production*, 1111; See Also Jan Jans and Hans Vedder. *European Environmental Law*, (4th Ed Europa

Commission opted for a centralised allocation system.⁶⁴⁰ However, the CJEU stated that the Commission had exceeded its competence⁶⁴¹ in so doing and the scheme remained much the same. The Court's finding that whilst the Commission had the regulatory competence over the EU-ETS as a market it did not have competence to annul the NAP, which were the root cause of the over allocation simply because the Commission believed a centrally co-ordinated allocation plan was better.⁶⁴² Therefore although the Commission retains its environmental competence even over energy assets,⁶⁴³ where a Directive places an obligation (or competence) on a member state the Commission is not able to override the drafting of the Directive.

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In 2012, via the adoption of Regulation (600/2012)⁶⁴⁵ relating to the verification of carbon emissions and Regulation (601/2012)⁶⁴⁶ relating to the monitoring and reporting of carbon emissions the Commission was given exemplars and further tools to support the understanding of the requirements of the EU-ETS market as well as promoting a more harmonised and cost-effective allocation of emissions credits.⁶⁴⁷

In the current third phase of the trading scheme it is hoped that the over allocation of allowances will be corrected with the establishment of the Stability Reserve, which will start operating in January 2019,⁶⁴⁸ whereby 'adding' allowances to a reserve account by deducting them from future auction volumes. It has also been stated that imposing stringent ex-ante limits on the volume of allowances available will enhance confidence in the market and thus increase its price and

Law Publisher, 2011), 32; Joelle de Sepibus, 'The European Emission Trading Scheme Put to the Test of state aid Rules' (2007) NCCR Trade Working Paper 12; Angus Johnson 'Free Allocation of Allowances Under the EU Emissions Trading Scheme – Legal Issues' (2006) 6 Journal of Climate Policy, 115

⁶⁴⁰ EU Commission 'EU ETS Handbook' (2015), 43 available at

https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf accessed 21 December 2017

⁶⁴¹ Case T-183/07 *Poland v Commission* ECLI:EU:T:2009:350 para 120 & 131, the appeal C-504/09P

Commission v Poland ECLI:EU:C:2012:178 para 78 was unsuccessful; See also C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179 para 80 & 81

⁶⁴² Case T-387/04, *EnBW Energie Baden-Württemberg v Commission* ECLI:EU:T:2007:117; Case C-295/14 *DOW Benelux BV v Staatssecretaris van Infrastructuur en Milieu*; Case T-233/04 *Netherlands v Commission* ECLI:EU:T:2008:102; Case C-279/08 *Commission v Netherlands* ECLI:EU:C:2011:551; Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311; Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

⁶⁴³ Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

⁶⁴⁴ Case C-239/01 *Germany v Commission* ECLI:EU:C:2003:514 para 37 and Case C-244/03 *France v Parliament & Council* ECLI:EU:C:2005:299, para 14

⁶⁴⁵ Commission Regulation 600/2012 (21 June 2012) 'the verification of carbon emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC' OJ L 181/1

⁶⁴⁶ Commission Regulation 601/2012 (21 June 2012) 'the monitoring and reporting of carbon emissions pursuant to Directive 2003/87/EC' OJ L 181/30

⁶⁴⁷ Article 4, European Directive 23 April 2009, 'Amending Directive 2003/87/EC so as to improve and extend the carbon emission allowance trading scheme' OJ L 140/71

⁶⁴⁸ COM (2014) 20/2 'concerning the establishment and operation of a market stability reserve for the Union carbon emission trading scheme and amending Directive 2003/87/EC' available at www.ec.europa.eu/clima/policies/ets/reform/docs/com_2014_20_en.pdf accessed on 5 April, 2016

incentive effect.⁶⁴⁹ Following further amendments to the Emissions Trading Directive, during the trading period (2013-20) the Commission now undertakes the distribution of allowances centrally.⁶⁵⁰

As stated above, 60% of emission allowances were allocated to utility companies, hence they hold a central position in the EU-ETS, emitting a cocktail of greenhouse gases⁶⁵¹ which not only contribute to climate change but can form 'acid rain'.⁶⁵² Despite initially receiving many of the allowances for free (grandfathering),⁶⁵³ by the third trading period the utility companies had less concern over the potential for EU or national regulators to take action if they added the traded market price of the allowances to the price of electricity sold, realising any windfall profits in the process.⁶⁵⁴

Therefore, from a legal conflicts perspective the EU-ETS conflicts with two main elements of primary EU law, (i) the 'polluter pays' principle in Article 191(2) TFEU,⁶⁵⁵ and (ii) due to the allocation of free allowances which can be traded, state aid – Article 107 TFEU.⁶⁵⁶

Initially looking at the conflict with the 'polluter pays' principle it can be argued that the provisions contained in Article 191(2) TFEU are absolute. The drafting of Article 191(2) TFEU states that 'the polluter should pay'⁶⁵⁷ therefore any EU scheme which has allocated free allowances which can then be sold is in direct conflict with

⁶⁴⁹ Jing Hu, Wina Crijns-Graus, Long Lam and Alyssa Gilbert, 'Ex-ante Evaluation of EU ETS During 2013-2030: EU Internal Abatement' (2015) 77 Energy Policy 152

⁶⁵⁰ Commission Regulation (1031/2010/EU) 'the timing, administration and other aspects of auctioning of carbon emission allowances pursuant to Directive 2003/87/EC' <http://ec.europa.eu/clima/pol> accessed 12 January 2018

⁶⁵¹ carbon dioxide (CO₂), carbon monoxide (CO), nitrogen dioxide (NO₂) – which combines with rain to form nitric acid, sulphur dioxide (SO₂) – which combines with rain to form sulphuric acid – so called acid rain - European Commission, 'EU ETS Handbook' (2015) https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf accessed 17 January 2018

⁶⁵² Acid Rain is mainly caused by combustion of fossil fuels which results in emissions of sulphur dioxide (SO₂) and nitrogen oxides (NO_x) - <https://www.conserve-energy-future.com/causes-and-effects-of-acid-rain.php>

⁶⁵³ The allocation for free of EU-ETS allowance on the basis of historic emission patterns. With the view that prior emissions increased entitlements to future emissions allowances - Carl Knight, 'What is grandfathering?' (2013) 22(3) Environmental Politics, 410 See Also Mehdy Abbas Khayli 'The Roles Played by the Polluter Pays Principle in state aid Law' (2013) 6 Jean Monnet Working Paper Series available at www.tradeenvironment.eu accessed 28 October 2017

⁶⁵⁴ J Bushnell, H Chong and E Mansur, 'Profiting from regulation: Evidence from the European Carbon Market' (2013) 5(4) American Economic Journal: Economic Policy, 78; see also Ulrich Wagner, Mirabelle Muûls, Ralph Martin and Jonathan Colmer, 'An evaluation of the impact of the EU emissions trading system on the industrial sector. Plant-level evidence from France' (6 June 2015) AERE Conference, Canada

⁶⁵⁵ E Woerdman A Arcuri and S Clo, 'Emissions Trading and the Polluter Pay Principle: Do Polluters Pay under Grandfathering' (2008) 4(2) Review of Law & Economics, 565

⁶⁵⁶ Opinion of Advocate General Kokott delivered on 21 March 2013, Joined cases C-566/11, C-567/11, C-580/11, C-591/11, C-620/11 and C-640/11, *Iberdrola, SA and Others v Administración del Estado* ECLI:EU:C:2013:191, para. 2. On windfall profits, also with regard to their State aid implications, see, Stefan Weishaar, 'Auctions – The Solution To Windfall Profits and End of All state aid Problems?' (2010) Amsterdam Law Forum; See also Stefan Weishaar and W. Woerdman, 'Does Auctioning Emission Rights Avoid state aid? Empirical Evidence from Germany' (2012) 6(2) Carbon and Climate Law Review, 114; See Also C Egenhoffer, M Alessi, A Georgiev, N Fujiwara, 'The EU ETS and Climate Policy towards 2050: Real Incentives to Reduce Emissions and Drive Innovation?' (2011) CEPS Special Report 14; See Also Angus Johnston, 'Free Allocation of Allowances Under the EU Emissions Trading Scheme - legal Issues' (2006) Climate Policy, 115; Joëlle de Sepibus, 'The European Emissions Trading Scheme Put to the Test of state aid Rules' (2007) NCCR Working Paper, 1

⁶⁵⁷ Case C-1/03 *Van de Walle* ECLI:EU:C:2004:490 para 42-53; See also Case C-188/07 *Commune de Mesquer v Total France SA and Total International Ltd* ECLI:EU:C:2008:359 para 49-63

the principle. It should be noted that as from January 2017 coal and gas electricity generating plant are required to purchase carbon allowances.⁶⁵⁸ However, other sectors which also received free allowances have not been required to purchase their required allowances.

It is argued that having an emissions trading mechanism without a floor price equal to the cost of carbon sequestration⁶⁵⁹ means that the polluter has not paid the true cost for the emissions and these costs have been socialised (spread across society).⁶⁶⁰

The ultimate position in relation to a conflict with Article 191(2) TFEU is that an emissions trading scheme of any sort assumes that emissions will occur. Therefore, the Emissions Trading Directive conflicts with the 'rectified at source' and 'polluter pays' principles contained within Article 191(2) TFEU.

Despite the above conflicts the most widely adjudicated⁶⁶¹ conflict for the EU-ETS is state aid (Article 107 TFEU) resulting from the free allocation by the state as part of the NAP something which was tradeable⁶⁶² and the over allocation of emission allowances which caused a distortion to competition.⁶⁶³

Furthermore, the pass-through of the costs of emissions allowances to end users became an issue within many trade bodies and intensive energy users.⁶⁶⁴ As a result of this lobbying, the Commission has published state aid guidelines⁶⁶⁵ which allow the exemption of certain industry sectors from the payment of the carbon price – allowing many of these consumers to buy electricity on the basis of a 'dirty' spread

⁶⁵⁸ Article 10(a) Emissions Trading Directive

⁶⁵⁹ Carbon sequestration describes long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming and avoid dangerous climate change – Roger Sedjo and Brent Sohngen, 'Carbon Sequestration in Forests and Soils' (2012) 4 Annual Review of Resource Economics, 127

⁶⁶⁰ C-293/97 *R v Minister of Agriculture, Fisheries and Food, ex parte Standley* ECLI:EU:C:1999:215 para 51-52; See Also Case C-254/08 *Futura Immobiliare srl Hotel Futura v Comune di Casoria* ECLI:EU:C:2009:479 para 64-67

⁶⁶¹ Case T-183/07 *Poland v Commission* ECLI:EU:T:2009:350 para 120 & 131, the appeal C-504/09P *Commission v Poland* ECLI:EU:C:2012:178 para 78 was unsuccessful; See also C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179 para 80 & 81

⁶⁶² Case T-387/04, *EnBW Energie Baden-Württemberg v Commission* ECLI:EU:T:2007:117; Case C295/14 *DOW Benelux BV v Staatssecretaris van Infrastructuur en Milieu*; Case T-233/04 *Netherlands v Commission* ECLI:EU:T:2008:102; Case C-279/08 *Commission v Netherlands* ECLI:EU:C:2011:551; Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311; Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

⁶⁶³ Jan Jans & Hans Vedder, *European Environmental Law*, (4th Ed Europa Law Pub, 2011), 321; Joelle de Sepibus, 'The European Emission Trading Scheme Put to the Test of state aid Rules' (2007) NCCR Trade Working Paper 12; Angus Johnston 'Free Allocation of Allowances Under the EU Emissions Trading Scheme – Legal Issues' (2006) 6(1) Journal of Climate Policy, 115

⁶⁶⁴ Joelle de Sepibus, 'Scarcity and Allocation of Allowances in the EU Emissions Trading Scheme - A Legal Analysis' (2007) NCCR Trade Working Paper, 36

⁶⁶⁵ Wolf Sauter and Hans Vedder, 'State Aid and Selectivity in the Context of Emissions Trading: Comment on the NOx Case' (2012) 3, European Law Review; See Also Commission decision 29 March 2000, Case N 653/1999, 'Denmark - CO2-quota system' OJ C 322, 9; See Also Commission decision of 28 November 2001, Case N 416/2001, United Kingdom - Emission trading scheme OJ C 88, 16; Commission decision of 25 Jul 2001, Case N 550/2000, 'Belgium, Green Electricity Certificates' OJ C 330, 3

⁶⁶⁵ Commission Communication C158/4, 'Guidelines on Certain state aid Measures in the Context of the Carbon Emission Allowance Trading Scheme Post 2012' 5 June 2012

price rather than a 'clean' spread price⁶⁶⁶ and as such is seen, within certain limits, as justifiable state aid.⁶⁶⁷ The aid intensity (amount of the additional costs which can be granted as state aid) for the additional costs of purchasing carbon credits started at 85% in 2013 and will fall to 75% by 2020. Currently Germany, the United Kingdom, the Netherlands, Belgium and Norway (an EEA country but still part of the trading scheme) provide such aid. Although allowed by the Commission this type of state aid is argued to be a clear case of the Commission giving way to industry lobbying at the expense of other consumers who are less able to induce the Commission to find in their favour.

The conclusion from the above is that due to the over allocation of emission allowances the EU-ETS has also failed to promote sustainability with the EU electricity sector. It is also clear that the EU-ETS conflicts with the state aid and the polluter pays principles. Thus, to avoid these conflicts with primary EU law, the EU-ETS only works as part of a consistent framework of policy instruments, with allowances being either allocated due to need or purchased in their entirety.⁶⁶⁸

2.10.2 Effort Sharing Decision⁶⁶⁹ – Regulating the Kyoto Protocol Gases Scheme

The Effort sharing Decision allows the EU to directly fulfil its obligations under the Kyoto Protocol to manage the listed greenhouse gases. The Effort Sharing Decision sets mandatory limits for the six Kyoto Protocol⁶⁷⁰ greenhouse gases not traded within the EU-ETS. Due to the sectors which form part of the Decision's scope they influence the demand for electricity, thus the type of generation that is dispatched⁶⁷¹ and hence the wholesale price for electricity. Any regulatory instrument which affects the wholesale price for electricity has a feedback mechanism into the renewable

⁶⁶⁶ The 'spread' is the difference between the selling price for electricity and the cost of production – clean spread includes the carbon allowance price and dirty spread does not include the carbon price

⁶⁶⁷ Case C-279/08 *Commission v Netherlands* ECLI:EU:C:2011:551

⁶⁶⁸ Benjamin Görlacha 'Emissions Trading in the Climate Policy Instrument Mix: understanding and Managing Interactions with other Policy Instruments', (2014) 25(34) *Energy & Environment* 733-49

⁶⁶⁹ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

⁶⁷⁰ Kyoto Protocol to the United Nations Framework Convention on Climate Change (1998) Annex A - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆); available at http://unfccc.int/kyoto_protocol/items/2830.php

⁶⁷¹ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE

electricity support schemes⁶⁷² of member states and the amount of money which flows through these schemes.

The Effort Sharing Decision provides a C&C based solution to emissions abatement and is within the environmental competence of the Commission. The Effort Sharing Decision forms part of the Third Energy Package.⁶⁷³

The Effort Sharing Decision consists of the following main elements: (i) a definition of the greenhouse gas targets for 2020 for each member state as a percentage of the 2005 emissions and a definition of how the annual targets for the years 2013-2019 are to be calculated (Article 3); (ii) provisions relating to the general principles on the flexibilities allowed to member states (Article 3 and 5), such as banking,⁶⁷⁴ borrowing,⁶⁷⁵ the use of the Kyoto flexible mechanisms⁶⁷⁶ such as the clean development mechanism,⁶⁷⁷ joint implementation⁶⁷⁸ and the inter-member state transfer of allocated emission allowance units (the concepts of banking and borrowing not being present in the EU-ETS this makes the Effort Sharing Decision important for the future of the EU-ETS due to the coming together of the two mechanisms in the 2020 – see below); (iii) compliance and inventory reporting (Article 6); (iv) the penalties which may be imposed on member states in case of non-compliance in any of the years until 2020 (Article 7). A member state which is none-compliant for a specific year will see its emissions allowance amount decrease by a volume equal to 1.08 times the shortfall of the previous year. Also, such a member state will not be able to transfer its unused quota to another member state; (v) the principles on how the Effort Sharing Decision should be adjusted if an international agreement on climate change is reached⁶⁷⁹ which would result in the EU taking a tighter overall 2020 target (Article 8); and (vi) the principles on how the

⁶⁷² 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁶⁷³ <https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation>

⁶⁷⁴ A Member State is allowed to carry over unused entitlement of a specific year to any future compliance year until 2020 without limitations

⁶⁷⁵ A Member State is allowed to borrow up to 5% of its entitlements from its future compliance years

⁶⁷⁶ Kyoto units are Certified Emission Reductions issued from Clean Development Mechanism projects, Emission Reduction Units issued from Joint Implementation projects, Removal Units generated from carbon sink activities, Assigned Amount Units which are tradeable fractions of Annex 1 Countries' to the Kyoto Protocol emission allocations

⁶⁷⁷ A Member State is allowed to transfer its Kyoto unit quota to another Member State up to an amount corresponding to 3% of its 2005 emissions

⁶⁷⁸ A project defined in Article 6 of the Kyoto Protocol, allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B Party) to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex B Party

⁶⁷⁹ In the second commitment period of the Kyoto Protocol the EU did not commit to a tighter target, thus such a review process has not been triggered to-date

scope of the Effort Sharing Decision would change according to possible changes in the scope of the Emission Trading Directive (Article 10).⁶⁸⁰

In contrast to the EU-ETS where the majority of scheme participants were initially allocated allowances for free in order to provide a form of protection from sudden changes in the economic environment for scheme participants, no such transitional arrangements were put in place within the Effort Sharing Decision framework.⁶⁸¹ The Effort sharing Decision manages this issue by setting limits on the basis of a member states' relative wealth with some countries being allowed to increase their emissions (Romania and Bulgaria increase by 20%) as a result of economic growth whilst others are to reduce emissions.

To bring market mechanisms to the abatement processes for the gases controlled by the Effort Sharing Decision, in October 2014, the European Council decided to enhance the availability and the use of existing flexibility instruments.⁶⁸² Auctioning of annual emission allocations was one option proposed to enhance flexibility, with the development of a permanent platform on which member states could bid and sell their allocations.⁶⁸³ This auction process thus enhances the potential to reduce the emission of greenhouse gases which are not included within the EU-ETS and in so doing allowing fair price discovery,⁶⁸⁴ transparency and the lowering of transaction costs.⁶⁸⁵ Regulatory outcomes could be seen to satisfy both the sustainability and affordability elements of the electricity 'trilemma'.⁶⁸⁶

This change makes the processes related to the gases regulated by the Effort Sharing Decision more aligned with the EU-ETS, therefore, from 2020 onwards, the two schemes could share a common trading platform, simply focusing on different gases from different players.

Studies⁶⁸⁷ have shown that not taking part in the EUs emissions reductions schemes increases the cost of carbon emission reductions and therefore

⁶⁸⁰ Anja Kollmuss, 'Tackling 60% of the EU's Climate Problem the Legislative Framework of the Effort Sharing Decision' (May 2013) Carbon Market Watch Report, 4

⁶⁸¹ Christina Hood, 'Reviewing existing and proposed emissions trading systems' (2010) OECD/IEA, Paris

⁶⁸² European Council (2014): European Council Conclusions, 23/24 October 2014. EUCO 169/14, para. 2.12.

⁶⁸³ Frans Duijnhouwer, 'Enhancing existing flexibility instruments to ensure cost-effectiveness, presentation' (2015) Brussels; See also European Commission Auctioning, http://ec.europa.eu/clima/policies/ets/cap/auctioning/index_en.htm.

⁶⁸⁴ Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHG> accessed 30 March 2018

⁶⁸⁵ Nils Meyer-Ohlendorf, Benjamin Görlach and Ennid Roberts, 'EU Effort Sharing Decision after 2020: Auctioning of AEAs' (19 January 2016) Ecological Institute, Berlin

⁶⁸⁶ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁶⁸⁷ Kirk Hamilton, Milan Brahnbhatt and Jiemei Lui 'Multiple Benefits from Climate Change Mitigation' (2017) LSE Graham Research Institute for Climate Change Working Paper; See Also Kirk Hamilton, 'Economic co-benefits of

compliance. Hence the future scope of the management scheme for the Kyoto gases is seen as core to the effective compliance with the EU's Kyoto Protocol commitments.⁶⁸⁸ Additionally, with the increased use of market mechanisms and the ability to trade allowances, it is argued that the effect on the electricity demand due to curtailed industrial output will be minimised and thus a more predictable demand pattern will emerge which can be addressed readily by both renewable and other forms of electricity generation.

As is known, in October 2014, the EU set a binding economy-wide domestic emission reductions target of at least 40% by 2030 compared to 1990.⁶⁸⁹ As part of this target it was stated that sectors not covered by the EU ETS must reduce emissions by 30% by 2030 compared to 2005 as their contribution to the overall target.⁶⁹⁰

On 20 July 2016, the European Commission presented a legislative proposal, called the 'Effort Sharing Regulation', setting out binding annual carbon emission targets for member states for the period 2021–2030 (targets for sectors that fall outside the scope of the EU-ETS - including transport, buildings, agriculture and waste management).⁶⁹¹ The regulation aimed to ensure that the non-ETS emissions reduction target of 30% by 2030, compared to 2005 levels, is reached. This agreement was said to bring closer the EU's ability to fulfil its Paris climate commitment (COP 21 – See Section 2.5) of at least a 40% cut in carbon emissions by 2030 compared to 1990 levels.⁶⁹²

Following discussions at the EU's Environmental Council during 2017, EU ambassadors gave their support to the provisional text of the Effort Sharing Regulation⁶⁹³ on 17 January 2018,⁶⁹⁴ and as such the Regulation was ratified on 18 May 2018.⁶⁹⁵

reducing CO2 emissions outweigh the cost of mitigation for most big emitters' (2017) LSE Graham Research Institute for Climate Change Working Paper

⁶⁸⁸ Frédéric Babonneau, Alain Haurie and Marc Vielle, 'Welfare implications of EU effort sharing decision and possible impact of a hard Brexit' (May 2017) 5th International Symposium on Environment Energy Finance Issues, Paris

⁶⁸⁹ EU COM 0482/2016 'on binding annual carbon emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement' available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0482> accessed 1 May 2018, Recital 1

⁶⁹⁰ Ibid, Recital 2

⁶⁹¹ Ibid, Article 4

⁶⁹² Femke de Jong, 'The 2030 Effort Sharing Regulation: How can the EU's largest climate tool spur Europe's low-carbon transition' [2016] Carbon Market Watch Policy Briefing available at https://carbonmarketwatch.org/wp-content/uploads/2016/09/CMW_THE-2030-EFFORT-SHARING-REGULATION_final2016_WEB.pdf accessed 21 May 2018

⁶⁹³ EU Regulation on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013, 26 April 2018, 2016/0231 (COD), PE-CONS 3/18

⁶⁹⁴ <http://www.consilium.europa.eu/en/press/press-releases/2018/01/17/effort-sharing-regulation/>

⁶⁹⁵ http://www.consilium.europa.eu/en/press/press-releases/2018/05/14/effort-sharing-regulation-council-adopts-emission-reduction-targets/?amp;utm_medium=email&utm_campaign=Effort+sharing+regulation%3a+Council+adopts+emission+reduction+targets

In terms of the conflict position of the current framework, it is believed to have an identical conflict position related to the 'polluter pays' principle and the requirement to rectify environmental damage at source as the EU-ETS.

As the Decision allows the emission of greenhouse gases within the limits set, it can be argued that the 'polluter pays' principle has not been fully implemented in relation to the gases regulated. The judgement in the *GEMO*⁶⁹⁶ case confirms that where an undertaking is relieved of a cost that it would face in compliance with the 'polluter pays' principle (Article 191(2) TFEU) this is state aid.

However, applying the criteria set out in *Pearle*,⁶⁹⁷ that for an intervention to be state aid it must be made by the State and through State resources, it is unlikely that compliance by undertakings with the Effort Sharing Decision would be considered by the CJEU to be state aid, as there were no allowances granted for free or at a reduced price as was the case in the EU-ETS. Therefore, other than a strict enforcement of the 'polluter pays' or rectified at source principles of Article 191(2) TFEU in the future the conflict is likely to go untested by the CJEU.

2.10.3 Industrial Emission Directive⁶⁹⁸ – Controlling Thermal Generation & Setting Electricity Market Price

The Industrial Emissions Directive is a C&C style of regulatory instrument. It sets clear limits on emissions for generating facilities, these emissions covering not only gases but also materials such as dust and ash. The Directive can be considered an environmental measure and as such falls within the competency of the Commission. The analysis below considers the regulatory framework set out by the Directive as well as how this framework conflicts with EU primary law.

As stated above, the EU has declared that 80%⁶⁹⁹ of its emissions come from electricity generation and as such the control of such emissions sources is critical to the meeting of emissions reduction targets.⁷⁰⁰

⁶⁹⁶ Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622, para. 31 to 34. AG Jacobs had considered that 'the provision free of charge of a collection and disposal service for dangerous animal waste [was relieving the] ... farmers and slaughterhouses of an economic burden which would normally, in accordance with the polluter-pays principle, have to be borne by those undertakings'. See Opinion AG Jacobs in Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2002:273, para. 64

⁶⁹⁷ Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfschap Ambachten* ECLI:EU:C:2004:448 para 33

⁶⁹⁸ European Directive 2010/75/EU (24 November 2010) 'Industrial emissions (integrated pollution prevention and control)' OJ L 334/17

⁶⁹⁹ *ibid* para 1

⁷⁰⁰ To this end in November 2005, the European Commission launched a review of legislation on industrial emissions (European Commission COM (2005) 540 'Report of the Commission on the implementation of Directive 96/61/EC concerning integrated pollution prevention and control'). This led to the Commission proposing an Industrial Emissions Directive on 21 December 2007 (European Commission COM (2007) 844 'Industrial

The Industrial Emissions Directive is drafted to prevent, reduce and eliminate pollution arising from industrial activities in compliance with the 'polluter pays'⁷⁰¹ (Article 191(2) TFEU).⁷⁰² The Directive seeks to implement emissions reduction by using (i) an integrated approach,⁷⁰³ (ii) best available techniques,⁷⁰⁴ (iii) flexibility,⁷⁰⁵ (iv) inspections⁷⁰⁶ and (v) public participation, all very much C&C regulatory features.⁷⁰⁷

Implementation of the Directive was carried out over several years, starting in January 2013 with full implementation in January 2016.⁷⁰⁸ The Directive also takes an integrated approach to industrial emissions, bringing seven separate directives into one.⁷⁰⁹

- Large Combustion Plant Directive⁷¹⁰
- Integrated Pollution Prevention and Control Directive⁷¹¹
- Waste Incineration Directive⁷¹²
- Solvent Emissions Directive⁷¹³
- Three existing directives on titanium dioxide⁷¹⁴

emissions (integrated pollution prevention and control'). The Directive was ratified by the European Council on 8 November 2010 and came into force on 6 January 2011.

⁷⁰¹ The polluter pays principle is set out in the Article 191(2) Treaty on the Functioning of the European Union and Directive 2004/35/EC (21 April 2004) 'environmental liability with regard to the prevention and remedying of environmental damage is based on this principle'

⁷⁰² European Directive 2010/75/EU (24 November 2010) 'Industrial emissions (integrated pollution prevention and control)' OJ L 334/17, Preamble para 2

⁷⁰³ The integrated approach means that the permits must take into account the whole environmental performance of the plant, covering e.g. emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention of accidents, and restoration of the site upon closure -

<http://ec.europa.eu/environment/industry/stationary/ied/legislation.htm> accessed 1 May 2018; See also Industrial Emissions Directive Article 14

⁷⁰⁴ Best available techniques (BATs): the most effective techniques for preventing or reducing emissions that are technically feasible and economically viable within the sector - <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:ev0027&from=EN> accessed 1 May 2018; Industrial Emissions Directive Article 11, 13, 14, 19, Annex III

⁷⁰⁵ Competent authorities have flexibility to set less strict emission limits, where an assessment shows that achieving the emission levels associated with BAT leads to disproportionately high costs compared to the environmental benefits: Till Bachmann and Jonathan van der Kamp, 'Environmental cost-benefit analysis and the EU Industrial Emissions Directive: Exploring the societal efficiency of a DeNOx retrofit at a coal-fired power plant' (2014) 68 Energy, 125

⁷⁰⁶ Industrial Emissions Directive Articles 30(9) and 73

⁷⁰⁷ Industrial Emissions Directive Article 24

⁷⁰⁸ January 2013 – applied to all new installations, January 2014 – applied to installations already in existence and regulated under the Integration Pollution Coordination & Control Directive before 6 January 2013 (except large combustion plants), July 2015 – applied to existing industrial activities with newly prescribed activities that are not subject to the Integration Pollution Coordination & Control Directive, January 2016 – applied to large combustion plants (effectively thermal power stations) already in existence before 6 January 2013, thus effectively replacing the Large Combustion Plan Directive from January 2016.

⁷⁰⁹ Industrial Emissions Directive, Recital 1

⁷¹⁰ Directive 2001/80/EC of 23 October 2001 'on the limitation of emissions of certain pollutants into the air from large combustion plants' OJ L 309, 27.11.2001

⁷¹¹ Directive 2008/1/EC of 15 January 2008, 'concerning integrated pollution prevention and control' OJ L 24/8 29.1.2008

⁷¹² Directive 2000/76/EC of 4 December 2000, 'on the incineration of waste' OJ L 332, 28.12.2000,

⁷¹³ Directive 1999/13/EC of 11 March 1999, 'on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations' OJ L85/1 29.3.1999

⁷¹⁴ Directives on (i) disposal (Council Directive 78/176/EEC), (ii) monitoring and surveillance (Council Directive 82/883/EEC) and (iii) programs for the reduction of pollution (Council Directive 92/112/EEC)

With the Renewable Energy Directive⁷¹⁵ effectively regulating 20% of the electricity market, the Industrial Emissions Directive is very important as it regulates the emissions from the remaining 80%.

Generation stations (defined in the Directive as 'large combustion plants') which were in operation on 29 March 1999 or which were granted a permit (or applied for one) before 1 April 2001 will have options under the Industrial Emission Directive to choose one of the so called 'Opt in' options or the 'Opt out' option:

- 'Opt in' Option 1 by committing to the emission limit values from 2016. So-called 'peaking plants' (i.e. those operating for no more than 1500 hours per year on a 5 year rolling average) will be subject to higher (i.e. less stringent than set out in the main body of the Directive) emission limits (relating to nitrogen oxide, sulphur dioxide and dust⁷¹⁶ – hence the reason many power stations that have standby diesel generators for black start⁷¹⁷ purposes have started burning bio-diesel and increasing their running hours to just below 1500 per year (for reference there are 8760 hours in a year).
- 'Opt in' Option 2 generation plant permitted before 27 November 2002 and operating by 27 November 2003, can enter into a transitional plan from 2016 to June 2020 and agree to comply with set emission limits (nitrogen oxide, sulphur dioxide and dust)⁷¹⁸ from July 2020 can continue operation.⁷¹⁹
- 'Opt out' by committing to operate for a maximum of 17,500 hours between 2016 and 2023. These generating plants can comply with the less stringent emission limits set out in the Large Combustion Plan Directive⁷²⁰ prior to ceasing operations by the end of 2023.⁷²¹

⁷¹⁵ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁷¹⁶ Ibid, Article 30(2)

⁷¹⁷ Black Start is the technical term given to the process whereby a power system is restarted following a total system failure. Many power plants are required to install diesel generators that can start and operate without the need to have a functioning electricity system into which electricity can be transmitted. A generating plant has a considerable "house" load in the form of pumps, fuel systems and control apparatus in order to operate, all of which must be running prior to starting the main generating plant

⁷¹⁸ Article 30(2) Industrial Emissions Directive

⁷¹⁹ Article 32 Industrial Emissions Directive

⁷²⁰ EU Directive 2001/80/EC 23 October 2001 'on the limitation of emissions of certain pollutants into the air from large combustion plants' OJ L309/44

⁷²¹ Article 33(1) Industrial Emissions Directive

To make these options work each member state is required to develop a Transitional National Plan,⁷²² which is intended to allow operators enough time to comply with the Directive's reduced emission limit values. The transitional national plan may set emission limits above Large Combustion Plant Directive levels, with the requirement that such limits become gradually stricter to build up to compliance with the Industrial Emission Directive's emission limit levels.⁷²³ This is done to ensure that coal generation, which forms a large section of the operating capacity in Poland⁷²⁴ and Germany,⁷²⁵ can transition to a sustainable operating regime within the Industrial Emissions Directive framework at the same time as other forms of generation are constructed to make good the capacity shortfall⁷²⁶ – the so called 'smart retirement policy'.⁷²⁷

The continued operation of the smart retirement policy, as currently envisaged, was highlighted as a business requirement during the empirical research such that the transitional national plans need to be formulated to provide a reasonable prospect of not causing a generation gap⁷²⁸ which is simply filled by importing electricity from other member states. The Industrial Emission Directive seeks to strengthen the concept of 'best available technology'⁷²⁹ and, subject to a

⁷²² Article 32 Industrial Emissions Directive

⁷²³ Industrial Emissions Directive, Article 32(2) using rates in Article

⁷²⁴ Bloomberg 'Poland Faces Harsh EU Reality in Push for Coal Exemptions', 17 May 2017, available at www.bloomberg.com/news/articles/2017-05-16/poland-faces-harsh-eu-reality-in-its-push-for-coalexemptions accessed 20 January 2018; See Also Michal Wierzbowski, Izabel Filipiak and Wojciech Lyzwa, 'Polish energy policy 2050 – An instrument to develop a diversified and sustainable electricity generation mix in coal-based energy system' (2017) 74 Renewable and Sustainable Energy Reviews, 51

⁷²⁵ Mariana Heinrich and Phil Hare, 'Outlook for New Coal Fired Power Stations in Germany, The Netherlands and Spain' [2013] Pöry Management Consulting Report for DECC UK; See Also DW 'Pressure on Germany to ditch coal intensifies', 2 October 2017 available at www.dw.com/en/pressure-on-germany-to-ditch-coal-intensifies/a-40778356

⁷²⁶ Simone Tagliapietra, 'Beyond Coal: Facilitating the Transition in Europe' (2017) 5 Bruegel Institute Policy Brief

⁷²⁷ Matthias Buck, Michael Hogan and Christian Redl, 'The Market Design Initiative and Path Dependency: Smart retirement of old, high-carbon, inflexible capacity as a prerequisite for a successful market design' [2015] Agora Energiewende

⁷²⁸ A generation gap is simply a shortfall in available generating capacity to meet demand for electricity present on the network

⁷²⁹ 'best available techniques' Article 10 and 13 Industrial Emissions Directive; '**Best**' is the most effective way of achieving a 'high general level of protection of the environment as a whole'. What this high general level may mean is not defined in the directive, but defined in several other EU legislation (e.g. Birds and Habitats Directive, Air Quality Framework Directive and the respective daughter directives, Water Framework Directive and daughter directives, Waste Framework Directive, chemicals legislation such as REACH etc.). The quality of 'Best' depends on the quality of legislative work of the EU and member states. '**Available**' implies that several conditions be met: scale, economic viability, efficiency and accessibility. Available techniques are already developed in terms of scale; they are hence 'ripe' techniques and capable of being applied widely across Europe. They must have proven the market test – that means they must have been applied under normal market conditions (economically and technically viable conditions). Establishing the external financial costs of pollution and hence the benefits of its reduction is still an ongoing methodological problem, which has produced many scientific controversies. In determining whether or not a technology is really economically viable, the crucial factor is the choice of methodology used to identify the external costs being defined. The Directive also states that the techniques need to be 'reasonable accessible to the operator', irrespective of whether produced or used in the member state in question. '**Techniques**' is not to be limited to 'technology used', it also refers to the way in which the installation is designed, built, maintained, operated and decommissioned. Christian Schaible 'New Features under the Industrial Emissions Directive: critical assessment of main provisions under the new IPPC framework' (2011) European Environmental Bureau

benefits analysis,⁷³⁰ to make its application more consistent between member states.⁷³¹

Respondents during the empirical research also made comment with regards to their desire to see the timetable for plant closure set out in the Industrial Emissions Directive⁷³² maintained, as this gave a degree of regulatory certainty and investment scenarios for new generating plant could be developed against this background.

Whilst the Industrial Emission Directive allows large coal fired generating facilities to continue operation, provided agreement can be reached with regards to emission levels (nitrogen oxide, sulphur dioxide and dust), the Directive incentivises electricity utilities to invest in reducing the emissions from their power plant and in return to obtain life extension and additional running hours.⁷³³ As most of the generating plant in question is fully depreciated,⁷³⁴ the investment, and thus the net book value,⁷³⁵ of the plant is only increased to the level of the emissions reducing equipment, allowing the plant to keep running with minimal effect on the balance sheet of a generating company, and thus the returns are seen to be higher than for a new plant,⁷³⁶ at a time when power prices are low and thus investment is difficult for many market participants.⁷³⁷ The exemptions have allowed a large amount of Europe's power plants to exceed the set standards and continue to operate and this

⁷³⁰ Till Bachmann and Jonathan van der Kamp, 'Environmental cost-benefit analysis and the EU (European Union) Industrial Emissions Directive: Exploring the societal efficiency of a DeNOx retrofit at a coal-fired power plant' (2015) *Energy*, 68

⁷³¹ Article 52 (5) Industrial Emissions Directive

⁷³² Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

⁷³³ H Sithole, T Cockerill, K Hughes, D Ingham, L Ma, R Porter and M Pourkashanian, 'Developing a Sustainable Electricity Generation Mix for the UK's 2050 Future' (2016) 100 *Energy*, 363

⁷³⁴ The accounting treatment for an asset that is fully depreciated and continues to be used in the business will be to report it on the balance sheet at its cost along with its accumulated depreciation. There will be no depreciation expense recorded after the asset is fully depreciated - www.accountingcoach.com/blog/fully-depreciated-assets

⁷³⁵ Net book value is the value at which a company carries an asset on its balance sheet. It is equal to the cost of the asset minus accumulated depreciation. For a fully depreciated asset the net book value will be zero. Net book value is one of the most popular financial measures, particularly when it comes to valuing companies. It is important to note that net book value almost never equals market value. This happens when assets are listed on the balance sheet at construction cost, meaning their balance sheet value is not updated as prices change. A company that holds a lot of physical assets (like power stations) on its balance sheet will likely have a net book value far below its market value. Also revenues are derived from the assets and placed in the profit and loss account without the need to place a depreciation liability on the balance sheet. – Ray Ball, Joseph Gerakos, Juhani Linnainmaa and Valeri Nikolaev 'Earnings, Retained Earnings, and Book-to-Market in the Cross Section of Expected Returns' (2018) 17(3) *Chicago Booth Research Paper*

⁷³⁶ One of the elements of a Company's balance sheet is the net book value of its assets. Net book value is calculated as the original cost of an asset, minus any accumulated depreciation and other impairments required by accounting standards. Utility companies tend to drive their business by the requirement to recover a certain rate of return on the net book value of its assets, therefore with income determined by the wholesale price of electricity a low network value company will have a higher reported return.

⁷³⁷ Diego García-Gusano, Diego Iribarren and Javier DuFour, 'Is coal extension a sensible option for energy planning? A combined energy systems modelling and life cycle assessment approach' (2018) 114 *Energy Policy*, 413

is seen as a major loop-hole within the Directive and a conflict with the 'polluter pays' principle.⁷³⁸

Despite the exemptions mechanisms within the Industrial Emissions Directive the overall incentive scheme is seen as positive as it increases the sustainability of the generating plant, makes electricity more affordable and lastly allows electricity generating plants which are not subject to intermittent wind or solar resources to continue to operate.⁷³⁹ Therefore in contributing to the resolution of the electricity trilemma the Industrial Emissions Directive is arguably a success, with the level of success very much qualified by the legal conflict issues set out below.

Considering the conflicts between the Directive and the EU's free trade principles, it should be firstly noted that the European Environmental Bureau stated, almost from the effective date of the Industrial Emissions Directive,⁷⁴⁰ that the system of derogations 'is a clear contradiction'⁷⁴¹ with the provisions of Article 191(2) (polluter pays). Moreover, as the 'polluter pays' principle was a feature of the *Walloon Waste*⁷⁴² case, which was determined in 1992, the Industrial Emissions Directive (effective over 20 years later in 2013) could be regarded as a missed opportunity, even on a *lex specialis* basis, to not only implement a co-ordinated approach to emissions control but to ensure this is implemented consistently across the EU and not left to interpretation and implantation by member states individually. This has meant that the Industrial Emissions Directive is also in direct conflict with the Treaty provisions contained in Article 191(2) TFEU in relation to 'rectified at source' as well as on the basis that the 'polluter should pay'.

As has been stated, for the Effort Sharing Decision,⁷⁴³ taking account of the finding in the *GEMO*⁷⁴⁴ case which confirms that where an undertaking is relieved of a cost that it would face in compliance with the 'polluter pays' principle (Article 191(2) TFEU), this is state aid. However, unlike the Effort Sharing Decision, the Industrial

⁷³⁸ Julia Fioretti, 'EU states approve plans for stricter limits on pollutants from power plants' Reuters, <https://www.reuters.com/article/us-eu-coal-pollutants/eu-states-approve-plans-for-stricter-limits-on-pollutants-from-power-plants-idUSKBN17U1ZO> accessed 28 December 2017

⁷³⁹ Till Bachmann and Jonathan van der Kamp, 'Environmental cost-benefit analysis and the EU (European Union) Industrial Emissions Directive: Exploring the societal efficiency of a DeNOx Retrofit at a coal-fired power plant' (2014) 68 Energy, 125

⁷⁴⁰ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

⁷⁴¹ Christian Schaible 'New Features under the Industrial Emissions Directive: critical assessment of main provisions under the new IPPC framework' [2011] European Environmental Bureau

⁷⁴² Case C-2/90 *Commission v Belgium* ECLI:EU:C:1992:310

⁷⁴³ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

⁷⁴⁴ Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622, para. 31 to 34. AG Jacobs had considered that 'the provision free of charge of a collection and disposal service for dangerous animal waste [was relieving the] ... farmers and slaughterhouses of an economic burden which would normally, in accordance with the polluter-pays principle, have to be borne by those undertakings'. See Opinion AG Jacobs in Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2002:273, para. 64

Emissions Directive is heavily reliant on the transitional national plans which are determined by the member states and therefore state aid can be found to have been applied where the transitional plans have conferred an advantage on an undertaking not available to others, as exactly was the case in the EU-ETS and the over allocation of emission allowances.⁷⁴⁵

2.10.4 Energy Efficiency Directive⁷⁴⁶ – Reducing Electricity Demand & Changing Demand Profile

The Energy Efficiency Directive is a key pillar of the Third Energy Package⁷⁴⁷ as it seeks to reduce the overall demand for energy across the EU. The Directive is a C&C regulatory framework rather than a market-based instrument. The Directive's objectives are highly interactive with those of the Emissions Trading Directive⁷⁴⁸ in that when efficiency increases, energy demand decreases, and the need for emissions allowances thus reduces. However, there is no feedback loop between the two Directives, as reductions in electricity demand simply increases the number of unrequired emission allowances, further depressing the price for carbon emissions via the EU-ETS.

The promotion of energy efficiency is specifically set out in Article 194 (1)(c) TFEU. In addition to the specific obligation set out in Article 194, energy efficiency related acts have also been adopted on the legal basis of the Common Commercial Policy, relating to external trade.⁷⁴⁹ The EU has stated that 'energy efficiency' provides the most universally available source of energy. Hence putting energy efficiency first means that the cheapest and cleanest source of energy is the energy that does not need to be produced or used.⁷⁵⁰ Increasing the efficient use of energy is seen to be a form of economic development⁷⁵¹ which is a core EU objective.⁷⁵²

⁷⁴⁵ Case T-183/07 *Poland v Commission* ECLI:EU:T:2009:350 para 120 & 131, the appeal C-504/09P *Commission v Poland* ECLI:EU:C:2012:178 para 78 was unsuccessful; See also C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179 para 80 & 81

⁷⁴⁶ Case T-387/04, *EnBW Energie Baden-Württemberg v Commission* ECLI:EU:T:2007:117; Case C295/14 *DOW Benelux BV v Staatssecretaris van Infrastructuur en Milieu*; Case T-233/04 *Netherlands v Commission* ECLI:EU:T:2008:102; Case C-279/08 *Commission v Netherlands* ECLI:EU:C:2011:551; Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311; Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

⁷⁴⁷ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

⁷⁴⁸ <https://ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation>

⁷⁴⁹ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

⁷⁵⁰ Case C-281/01 *Commission v Council (Energy Star)* ECLI:EU:C:2002:761

⁷⁵¹ COM(2016) 860, 'Clean Energy For All Europeans', 4

⁷⁵² Sanya Carley, 'Energy-based Economic Development' (2011) 15 *Renewable and Sustainable Energy Reviews* 282, 287

⁷⁵³ Pernille Schiellerup 'Energy saving is the key to EU energy and climate goals' in Katinka Barysch (ed) *Green, safe, cheap: Where next for EU energy policy?* (Centre for European Reform, 2011)

The current (2012) Energy Efficiency Directive⁷⁵³ is seen to provide a significantly more robust and ambitious instrument than its predecessors.⁷⁵⁴ The framework set out in the Energy Efficiency Directive aims to ensure the achievement of the EU's 20% energy efficiency target by 2020, and does this by (i) laying down rules which remove barriers in the energy market and establishing 'indicative' national energy efficiency targets for 2020 (Article 1) and (ii) introducing the energy efficiency obligation scheme (Article 7). Only certain key features of the scheme are harmonised at EU level (targeted sectors, level of ambition and counting methods).

The current Energy Efficiency Directive sets out that member states must implement national measures to ensure energy savings for consumers and industry alike. For example:

- energy distributors or retail energy sales companies must achieve 1.5% energy savings per year through the implementation of energy efficiency measures⁷⁵⁵
- member states can opt to achieve the same level of savings through other means such as improving the efficiency of heating systems, installing double glazed windows or insulating roofs⁷⁵⁶
- the public sector in member states should purchase energy efficient buildings, products and services – an example being energy efficient buses⁷⁵⁷
- member states are to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area⁷⁵⁸
- empowering energy consumers to better manage consumption. This includes easy and free access to data on consumption through individual metering (the installation smart metering is also regulated by Directive 2009/72 – The Electricity Directive Article 3(1)⁷⁵⁹ which is not specifically a Directive within the renewable regulatory framework).
- national incentives for small and medium sized enterprises to undergo energy audits⁷⁶⁰

⁷⁵³ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

⁷⁵⁴ Angus Johnston and Guy Block, *EU Energy Law* (OUP, Oxford, 2012), 408

⁷⁵⁵ Article 7 (1), Energy Efficiency Directive

⁷⁵⁶ Article 4, Energy Efficiency Directive

⁷⁵⁷ Case C-513/99 *Concordia Bus Finland Oy Ab v Helsingin kaupunki and HKL-Bussiliikenne* ECLI:EU:C:2002:495 and Case C-448/01 *EVN AG and Wienstrom GmbH v Austria* ECLI:EU:C:2003:651

⁷⁵⁸ Article 5, Energy Efficiency Directive

⁷⁵⁹ Article 9, Energy Efficiency Directive

⁷⁶⁰ Article 8, Energy Efficiency Directive

- large enterprises⁷⁶¹ to undertake energy audits to identify ways to reduce consumption⁷⁶²
- monitoring efficiency levels in new energy generation plants⁷⁶³

Energy Efficiency Directive Article 15(5) requires member states to ensure that transmission and distribution system operators provide priority or guaranteed access to the electricity network and priority dispatch⁷⁶⁴ for high-efficiency cogeneration. These obligations are explicitly without prejudice to Article 16(2) of the Renewable Energy Directive, which provides priority grid access and priority dispatch for renewable generating facilities. The whole issue of priority dispatch and its distortive effect on competition and thus status as state aid, is discussed in Sections 2.10.6 (Electricity Markets Directive) and 2.10.7 (Renewable Energy Directive).

The Energy Efficiency Directive also requires that certain large buildings install photovoltaic cells or small wind turbines, within the building or nearby, to reduce the energy demand of the building. This it is argued restricts free movement of goods as it reduces the incentive to buy imported low-cost renewable energy – also it being regarded as anti-competitive, as it is known that electricity generated from photovoltaic cells is more expensive than that produced by largescale wind farms, a conflict with Article 107(1) (state aid) as it is distortive of competition (controlling production and markets by statute and hence the state).

The EU, in line with its climate and energy strategy, has presented a renewed ambition for the post-2020 period, towards 2030, through the Clean Energy for All Europeans⁷⁶⁵ package of proposals. The proposals include a new binding target where a minimum 30% for energy efficiency improvements is suggested. However, the need for a stronger governance framework to support the delivery of this target is also considered necessary.⁷⁶⁶ The framework is stated to mean that on average

⁷⁶¹ Large Enterprise has more than 250 employees and an annual turnover of more than €250m, Commission Recommendation of the Definition of Small & Medium Enterprise (2003/361/EC), available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003H0361&from=EN>

⁷⁶² Article 8, Energy Efficiency Directive

⁷⁶³ Article 15, Energy Efficiency Directive

⁷⁶⁴ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

⁷⁶⁵ COM(2016) 860 30 November 2016 'Clean Energy For All Europeans'

⁷⁶⁶ Guillermo Ivan Pereira and Patrícia Pereira da Silva, 'Energy efficiency governance in the EU-28: analysis of institutional, human, financial, and political dimensions' (2017) 10(5), Energy Efficiency, 1279

the carbon intensity of the EU's economy will be 43% lower in 2030 than currently,⁷⁶⁷ with renewable electricity representing about half of the EU's electricity generation mix.⁷⁶⁸

For energy efficiency measures to be effective, the Brundtland Report⁷⁶⁹ suggests that sustainable development requires the promotion of consumption patterns that are within levels which are ecologically reasonable (so called 'intergenerational energy justice').⁷⁷⁰ The Directive is focussed on reducing energy demand, establishing minimum energy efficiency requirements related to design standards and labelling systems.⁷⁷¹ These provisions may not, however, translate directly into a change in consumption behaviour or patterns⁷⁷² which is the focus of the Brundtland Report.⁷⁷³ As such the Energy Efficiency Directive may not have the long term success its initial results indicate.⁷⁷⁴

Overall, however, it has been stated that the Energy Efficiency Directive has produced tangible economic benefits in terms of GDP growth and carbon emissions reduction. Striving for more ambitious energy efficiency policies represents a win-win strategy, which should be exploited to a much larger extent.⁷⁷⁵ The Energy Efficiency Directive, which has a 20% energy reduction in energy consumption target, has not achieved the success of the Renewable Energy Directive because of a lack of binding national targets (the 20% target is only binding at the EU level).

To fully implement energy efficiency greater harmonisation across member states is needed so that all member states have a proactive attitude to energy efficiency, not just some.⁷⁷⁶

Also, the lack of clear financial criteria with which to model the installation of energy efficiency measures, compares poorly to the clear process within the Renewable Energy Directive.⁷⁷⁷ Furthermore, the lack of clear time horizons for

⁷⁶⁷ SWD(2016) 405 'Impact Assessment for the amendment of the Energy Efficiency Directive'

⁷⁶⁸ SWD(2016) 418 'Impact Assessment for the recast of the Renewables Directive'

⁷⁶⁹ World Commission on Environment & Development, 'Our Common Future', 4 August 1987, UN, GA res, A/42/427 (1987), Chptr 2, para 1

⁷⁷⁰ Raphael Heffron, Darren McCauley and Gerardo Zarazua de Rubens, 'Balancing the energy trilemma through the Energy Justice Metric' [2018] (Energy Justice Special Issue), Applied Energy

⁷⁷¹ Itziar Martinez de Alegria Mancisidor, Pablo Díaz de Basurto Uruga Iñigo Martínez de Alegria Mancisidor and Patxi Ruiz de Arbulo López., 'European Union's Renewable Energy Sources and Energy Efficiency Policy Review: The Spanish Perspective' (2009) 13 Renewable and Sustainable Energy Reviews 100, 112

⁷⁷² Ibid

⁷⁷³ World Commission on Environment & Development, 'Our Common Future', 4 August 1987, UN, GA res, A/42/427 (1987), Chapter 2, para 1

⁷⁷⁴ Susan Baker, Maria Kousis, Dick Richardson and Ivor Gaber, Routledge, *The Politics of Sustainable Development: Theory, Politics and Practice within the European Union* (Routledge 1997)

⁷⁷⁵ Marc Ringel, Barbara Schlomann, Michael Krail and Clemens Rohde, 'Towards a green economy in Germany? The role of energy efficiency policies' (2016) 179 Applied Energy, 1293

⁷⁷⁶ Energy Efficiency Watch ;Good practice ways out of energy debt' Available at www.energy-efficiency-watch.org/fileadmin/eew_documents/Documents/EEW2/Good_practice_ways_out_of_energy_debt_BROCHURE.pdf

⁷⁷⁷ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

investments means that facility owners are only able to put current energy market prices into their investment models, with no clear mechanism with which to model the longer term. This creates risk and uncertainty for investors as to when payback will be achieved: a clear deficiency in the regulatory principles upon which the Directive is drafted.

Additionally, the Energy Efficiency Directive in reducing energy demand has a cannibalistic⁷⁷⁸ effect on the incentives within the Emissions Trading Directive.⁷⁷⁹ Thus a feedback loop between the energy demand reductions achieved and the number of emission allowances available is needed. Falling demand should be directly correlated to emissions and therefore the number of allowances needed. Therefore, it would seem reasonable for the volume of allowances placed into the EU-ETS reserve account (See Section 2.10.1) to be increased as demand falls.

The Commission considers the demand side effect, derived from the Energy Efficiency Directive, as a key driver for reduced consumption.⁷⁸⁰ Whilst the Energy Efficiency Directive has reduced consumption it has also changed the shape of the electricity demand across the day.⁷⁸¹ These changes, reportedly, are not '*well understood*'.⁷⁸² They have, however, increased the requirement for electricity production from flexible peaking capacity (mostly carbon emitting gas fuelled generation), reducing asset utilisation and profitability⁷⁸³ and ultimately facilitating carbon emissions when this type of plant is dispatched.⁷⁸⁴ This puts the Energy Efficiency Directive in direct conflict with the 'polluter pays' principle, as an unintended consequence of the Directive is the increase in carbon emissions from generating facilities only dispatched for a short period.

Hence the Energy Efficiency Directive and the other Directives forming the renewable energy regulatory framework need to be co-ordinated to avoid a horizontal conflict between the regulatory provisions. The clash between the Energy Efficiency Directive and the EU-ETS outlined above creates a price and regulatory

⁷⁷⁸ Bianka Shoani-Tehrani and Pascal da Costa 'The Paradoxes of the European Energy Market Regulation: A Historical & Structural Analysis of the Electricity Mix' in Pascal da Costa and Danielle Attias (eds) *Towards Sustainable Economy: Paradoxes & Trends in Energy & Transportation* (Springer, 2018)

⁷⁷⁹ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

⁷⁸⁰ Comm (2017) 56 final '2016 assessment of the progress made by Member States in 2014 towards the national energy efficiency targets for 2020 and towards the implementation of the Energy Efficiency Directive 2012/27/EU'; This finding was confirmed by the International Energy Agency and the Odyssee-Mure decomposition analysis – available at https://www.iea.org/eemr16/files/medium-term-energy-efficiency-2016_WEB.PDF and Annex 5 of SWD (2016)405.

⁷⁸¹ Tobias Bossmann and Iain Staffell, 'The shape of future electricity demand: Exploring load curves in 2050s Germany and Britain' (2015) 90 *Journal of Energy*, 1317

⁷⁸² *Ibid*

⁷⁸³ *Ibid*

⁷⁸⁴ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 *CIGRE*

uncertainty for market operators which needs to be resolved (See Recommendation 2).

In terms of conflict with EU primary law the Energy Efficiency Directive not only reduces the volume of demand available for all forms of electricity generation to address, but also alters the disposition of that demand across the day. Such an outcome is arguably in contravention with Article 107(1) TFEU as it is a practice which limits and controls the electricity market, electricity production and is thus distortive of competition.

The limiting of demand, irrespective of the economic justification for doing so, reduces the opportunity for free movement of electricity from all types of generating facilities to address the demand, and as such the Energy Efficiency Directive could be said to conflict with primary EU law related to free movement of goods, although this is a weaker argument.

2.10.5 Carbon Capture & Storage Directive⁷⁸⁵ – Coal Generation's Future

Carbon capture and storage technology is not currently widely developed across the EU; however, it is likely to be a feature of any future 'coal renaissance'.⁷⁸⁶ A 'coal renaissance' would occur where the costs of renewables do not reduce to a price that would make European electricity compatible with the price of electricity in other industrial regions of the world.⁷⁸⁷ Also the global warming phenomenon is really a function of the volume (stock) of carbon emissions in the atmosphere rather than the speed of flow of emissions from electricity generation and other sources.⁷⁸⁸ Therefore deploying a technology which reduces the volume of carbon in the atmosphere is likely to grow in importance in the future. It is argued that the EU's renewables regulatory framework does not adequately address the need to reduce the volume of carbon emissions in the atmosphere.

⁷⁸⁵ Council Directive 2009/31/EC 23 April 2009 on the geological storage of carbon dioxide OJ L140/114 (Carbon Capture & Storage Directive)

⁷⁸⁶ 'Coal Renaissance' is a term given to an increased use of coal generation due to pricing and the restriction of other capacity types - Michael Le Page, 'Coal renaissance means switching to plan B on climate change' (2015) 3030 New Scientist; See Also Vanessa Mock, 'Coal Renaissance Risks Tarnishing the EU's Green-Energy Credentials' 2 Sept 2014 The Wall Street Journal; Iain Staffell, 'Coal comeback pushes up UK's carbon emissions' [2018] Imperial College London Working Paper

⁷⁸⁷ Stephen Rackley *Carbon capture and storage* (Butterworth-Heinemann, 2017); See also Farahiyah Abdul Rahman, Md Maniruzzaman Aziza, R Saidur, Wan Azelee Wan Abu Bakar, M.R Hainin, Ramadhansyah Putrajaya, Norhidayah Abdul Hassana, 'Pollution to solution: Capture and sequestration of carbon dioxide (CO₂) and its utilization as a renewable energy source for a sustainable future' (2017) 71 Renewable and Sustainable Energy Reviews, 112

⁷⁸⁸ Glenn Harrison 'Stocks and Flows' in Steven Durlauf and Lawrence Blume (eds) *The New Palgrave Dictionary of Economics* (Palgrave Macmillan, 2008); See Also Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change Law* (Oxford University Press, 2017)

The Directive does not illustrate a conflict with other primary or secondary EU legislation, however, it is set out here to show the breadth of the renewables regulatory framework.

A key feature of the permit-granting regime for thermal generating plant (coal and gas) is the necessity to undertake the capture and storage of carbon emissions. The stated purpose of the carbon capture and storage directive is to provide a regulatory framework for the capture, transport and permanent storage of carbon-based gases which are the result of combustion.⁷⁸⁹

The Carbon Capture & Storage Directive has been developed in no small part from the Integrated Pollution Prevention and Control Directive (96/61) (IPPC) – now superseded by the Industrial Emissions Directive.⁷⁹⁰

The main economic incentive to deploy carbon storage technology should be via the emission trading scheme (See Section 2.10.1 and 3.6). However, due to the low carbon prices seen within the scheme since its inception, there has been little drive to develop storage facilities.⁷⁹¹

The incentive within the regulatory framework to develop such a facility would be a generation company seeking to obtain consents for a new largescale coal fired power station within the EU. As from January 2015, the Carbon Capture and Storage Directive deems the maximum carbon output of a coal plant to be 500g CO₂/kWh therefore any emission above this level would need to be 'captured and stored'.⁷⁹² The recent Hinkley Point C case has confirmed the CJEU's view of the potential carbon emission ranges from different types of generation. The ranges considered by the CJEU were related to life cycle⁷⁹³ emissions as clearly wind, solar and nuclear have zero emissions during their operational life – wind and solar 13g/kWh, biomass 41g/kWh, gas 443 g/kWh and coal 1050g/kWh.⁷⁹⁴

Due to the long-term liabilities⁷⁹⁵ for the operators of such technology there have not been any serious investigations into permitting such a facility and as such the Directive has not been tested as a viable regulatory framework.⁷⁹⁶ The Directive is

⁷⁸⁹ Directive 2009/31 – 'Geological storage of carbon dioxide' April 2009; Recital 4

⁷⁹⁰ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

⁷⁹¹ OECD 'Effective Carbon Rates 2018 Pricing Carbon Emissions Through Taxes and Emissions Trading' (2018) available from <http://www.oecd.org/tax/effective-carbon-rates-2018-9789264305304-en.htm> accessed 18 September 2018

⁷⁹² Comm (2008) 18, 'Report on the amending proposal for Carbon Capture and Storage Directive'

⁷⁹³ Including manufacturing, construction and decommissioning

⁷⁹⁴ Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 454

⁷⁹⁵ A Haan-Kamminga, 'Long-term Liability for Geological Carbon Storage in the EU' (2011) 29 *Journal of Energy & Natural Resources Law* 309

⁷⁹⁶ S Brockett, 'The EU Enabling Legal Framework for Carbon Capture & Storage and Geological Storage' (2009) *Energy Procedia* 4433

not currently particularly addressing any of the electricity ‘trilemma’⁷⁹⁷ criteria due to the lack of an industrial scale test site in the EU.

2.10.6 Electricity Market Directive⁷⁹⁸ – The Market Structure

The Renewable Energy Directive⁷⁹⁹ seeks to put a structure in place which will support 20% of the EU’s energy being derived from renewables by 2020 (with higher levels of renewable exploitation being proposed for 2030 and 2050⁸⁰⁰ – See Sections 2.11.1 and 2.11.2), the other 80% of demand in the market is supplied by coal, gas, hydro and nuclear. Without the advantages of revenue support and priority dispatch,⁸⁰¹ the structure of the electricity market and the price signals that it gives are critical to this conventional generation.

Moreover, to reduce costs and liberalise the market the EU published a series of regulatory packages. The First Energy Package⁸⁰² was composed of only one Directive related to electricity and one for gas. The Second⁸⁰³ Energy Package, sought to strengthen the unbundling rules for transmission system operators and sought to ensure consumers were free to choose their supplier. The Third, and most recent, Energy Package brought together a series of measures based on two main principles to develop a more competitive and better-functioning energy market (i) unbundling,⁸⁰⁴ and (ii) third party access.⁸⁰⁵

One of the mainstays of the Third Energy Package is the 2009 Electricity Market Directive, which is derived from the requirements of TFEU Article 194, and sets out provisions in the following areas:

⁷⁹⁷ Trilemma of reliability, sustainability and affordability – See David Newbury ‘Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma’ [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁷⁹⁸ Council Directive 2009/72/EC 13 July 2009 Concerning common rules for the internal market in electricity OJ L 211/55 (Electricity Markets Directive) available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0072&from=en>

⁷⁹⁹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁸⁰⁰ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

⁸⁰¹ ‘Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.’ - P Palermo ‘Approaches to Generation Dispatch in Transmission Planning’ (2009) 135 CIGRE; therefore ‘Priority Dispatch’ is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

⁸⁰² Council Directives 96/92/EC concerning common rules for the internal market in electricity and 98/30/EC on common rules for the internal market in natural gas

⁸⁰³ http://ec.europa.eu/competition/sectors/energy/overview_en.html

⁸⁰⁴ Regulation (EU) No 1227/2011 Regulation on Wholesale Energy Market Integrity and Transparency

⁸⁰⁵ Regulation (EU) No 347/2013 Regulation on Guidelines for Trans-European Energy Infrastructure

- Regulation of transmission network ownership by ensuring a clear separation of supply and generation activities from network⁸⁰⁶ ;
- Ensuring more effective regulatory oversight from truly independent national energy regulators, strengthening and harmonising the competences and the independence of national regulators to allow effective and non-discriminatory access to the transmission networks;⁸⁰⁷
- Reinforcing consumer protection and ensuring the protection of vulnerable consumers;⁸⁰⁸
- Promoting regional solidarity⁸⁰⁹ by requiring member states to co-operate in the event of severe disruptions of gas supply. This has a direct effect on the electricity system as it can undermine the generation from gas fuelled generating facilities.

The 2009 Electricity Market Directive recognises in Recital 3 and 4 that the free movement of goods and the freedom to deliver electricity to customers are freedoms outlined by the Treaty, however it being recognised that not all member states provide the non-discriminatory network access and regulatory supervision necessary to achieve these goals. These goals are in horizontal conflict with the Article 3(3) of the 2009 Renewable Energy Directive which allows nationally focussed renewable energy support schemes⁸¹⁰ to be put in place by member states which restrict free movement (See Section 3.5.1 to 3.5.5).⁸¹¹

In principle, rules favouring one type of electricity generation over others (renewables v coal – with revenue support and priority dispatch⁸¹² for renewables)

⁸⁰⁶ EU Directive 2009/72/EC 13 Jul 2009 – Electricity Market Directive, Article 9 to Article 14

⁸⁰⁷ EU Directive 2009/72/EC 13 Jul 2009 – Electricity Market Directive, Article 35

⁸⁰⁸ EU Directive 2009/72/EC 13 Jul 2009 – Electricity Market Directive, Annex 1

⁸⁰⁹ Eglé Dagilyte, 'Solidarity - a General Principle of EU Law? Two Variations on the Solidarity Theme' in A Biondi, Eglé Dagilyte and E Kucuk.(Eds.), *Solidarity in EU Law: Legal Principle in the Making* (Edward Elgar, 2018)

⁸¹⁰ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Article 2 Renewable Energy Directive

⁸¹¹ Peter Cramton 'Electricity Market Design' (2017) 33(4) Oxford Review of Economic Policy, 589; See Also Hans Vedder, Anita Rønne, Martha M Roggenkamp and Iñigo del Guayo, 'EU Energy Law' in Martha Roggenkamp, Catherine Redgwell, Anita Rønne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

⁸¹² 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

are distortive of competition and thus contrary to the principles at the heart of the internal energy market. However, the Electricity Market Directive explicitly allows member states to discriminate and thus support certain technologies and capacity to be built.⁸¹³ A conflict is thus created with the Treaty Article 107(1) TFEU which prohibits the fixing of prices by the state as it is distortive of competition.

The Electricity Markets Directive is designed to coexist with the Renewable Energy Directive and thus states in Article 15(3) that renewable generating capacity shall enjoy priority dispatch.⁸¹⁴ This provision effectively removes renewable generation capacity from the need to compete either on price or on technical capability with gas and coal fuelled generation (discussed within the empirical research).

Renewable electricity and other forms of generation are thus dispatched using different rules. This practice is applying dissimilar conditions to equivalent transactions in that the dispatching of coal and gas fuelled generation capacity is based on price and certain technical characteristics of the capacity in question and renewable electricity is not: a practice in conflict with Article 107(1) TFEU as it is distortive of competition between electricity providers.

The Electricity Market Directive seeks to create conditions necessary for robust cross-border trade and investments in electricity.⁸¹⁵ Analysis has indicated that without the benefit of the internal market,⁸¹⁶ European customers would probably face a much higher financial burden in fulfilling the 20% renewable energy target,⁸¹⁷ thus the internal market has become a top priority for ACER.⁸¹⁸ The cross-border trading of electricity would also ensure that technology development is truly European and thus lead to a better utilisation of renewable energy sources.⁸¹⁹

In looking at the opportunity afforded by increased interconnection of transmission networks within the EU and potential harmonised trading rules

⁸¹³ EU Directive 2009/72/– Electricity Market Directive, Article 7

⁸¹⁴ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

⁸¹⁵ Andreas Gunst, 'Impact of European Law on the Validity and Tenure of National Support Schemes for Power Generation from Renewable Energy Sources' (2005) 23 Journal of Energy & Natural Resources Law 95, 97

⁸¹⁶ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

⁸¹⁷ CEPS Task Force Report, 'Energy Policy for Europe: Identifying the European Added-Value' [2008] Centre for European Policy Studies 61

⁸¹⁸ Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) Legal Aspects of EU Energy Regulation (Oxford University Press, 2016), 5

⁸¹⁹ CEPS Task Force Report, 'Energy Policy for Europe: Identifying the European Added-Value' [2008] Centre for European Policy Studies 61

facilitated by a revised Electricity Markets Directive, the importance of the ‘market access test’ (*Cassis de Dijon* – See Section 3.2)⁸²⁰ becomes evident. The trading of electricity at cross-border trading hubs⁸²¹ can be dynamic in terms of time (time spread)⁸²² and delivery location.⁸²³ Also, in many instances, electricity can be simply transiting a member state or region, and as such, prohibiting restrictions of goods in transit is an advantage to cross-border trading of electricity (*Ente Nazionale Risi*).⁸²⁴

In recognition of the opportunity afforded by technology developments in transmission assets and the market access test (*Cassis de Dijon*),⁸²⁵ the Third Energy Package contained Regulation (714/2009) on conditions for access to the network for cross-border exchanges in electricity (Cross-border Network Access Regulations).⁸²⁶ The Cross-border Network Access Regulations, importantly for cross-border trading of electricity, in Article 6 sets out the need for, and criteria to be used in, developing common rules for network access to facilitate trades and, in Article 16, also states that network charges must be transparent and non-discriminatory.

The goal of this Regulation, and thus market model, is a trading system focussed on open price discovery⁸²⁷ and market coupling (a means of linking zonal day-ahead spot markets into an EU-wide virtual market),⁸²⁸ with the market simultaneously determining volumes and prices in all relevant zones, based on the

⁸²⁰ Case 120/78, *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein* (*Cassis de Dijon*) ECLI:EU:C:1979:42

⁸²¹ The trading hub or power exchange is the heart of the electricity market. The power exchange’s members will consist of producers, retailers and traders as well as large end users. The exchange will trade a series of standard products in both volume and time, with the delivery location and other technical details relating to the trade set out in a trade master agreement. Each individual trade will in effect be a supplemental agreement to this trade master agreement. The market price is determined by supply and demand considerations, with both varying during the day, a different price is determined for each trading period (usually an hour, or in the UK half hour). The market price may vary somewhat between different market regions, depending on physical transmission limitations that sometimes occur and the generation mix within each region. Available at <https://corporate.vattenfall.com/about-energy/energy-markets/> accessed 22 April 2018

⁸²² The price differential, or spread, that may arise between differently dated futures contracts; Time spreads can be mitigated by purchasing options on the difference between average annual prices. In effect, such options provide protection against a reshaping of the forward price curve - Pricewaterhousecooper ‘glossary of oil and gas, utilities and mining commodity trading and risk management terms’ 2008 <https://www.pwc.com/gx/en/energy-utilities-mining/pdf/eumcommoditiestradingriskmanagementglossary.pdf>

⁸²³ A point on the grid where one electric utility can transfer its available energy to another utility’s system – Ibid

⁸²⁴ Case C-2/73 *Geddo v Ente Nazionale Risi* ECLI:EU:C:1973:89 para 7

⁸²⁵ Case 120/78, *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein* (*Cassis de Dijon*) ECLI:EU:C:1979:42

⁸²⁶ Regulation (EC) No 714/2009 of 13 July 2009 ‘on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003’ OJ L 211/27

⁸²⁷ Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHgYg> accessed 30 March 2018

⁸²⁸ Malcolm Keay, ‘The EU target model for electricity markets: fit for purpose?’ [2013] Oxford Institute for Energy Supplies, 2

marginal pricing⁸²⁹ principle and supply and demand.⁸³⁰ The major impediment to this regulatory goal is under-investment in cross-border transmission capacity.⁸³¹ Hence the importance⁸³² of the goal to have 15% of the EU's generation capacity reflected in interconnector capacity between member states as set out in the EU Communication on 'Strengthening Europe's Energy Network'.⁸³³

Lastly in considering the objective of integrated EU electricity market this would seem to be facilitated by *Dassonville*⁸³⁴ (*the prohibition of measures actually or potentially hindering trade*) and the market access test (*Cassis de Dijon*).⁸³⁵

However, an issue to be aware of in relation to the *Dassonville* formula and market access test is that they apply to the post production phase of the product lifecycle. Therefore, member states could restrict the domestic production of a product (e.g. electricity produced from coal, gas or nuclear), without breaching the formula. The Court has already ruled that such a practice is allowed in *Kramer*⁸³⁶ by allowing a restriction to the catching certain fish species. The use of this kind of restriction could be used by a member state to reduce the production of electricity produced by nuclear generation. This was an issue raised during the empirical phase of the research, in that respondents saw as a risk the potential for national governments to restrict the output or force the closure of certain capacity types domestically, simply for other member states to see this as an opportunity to export excess volumes of electricity produced by the very type of capacity that has been restricted in the first member state.

⁸²⁹ The wholesale price of electricity is set by the most expensive generating facility operating at any particular time - The wholesale price is dynamic, changing half hourly based on the demand for electricity and the availability of generating facilities. Generators submit 'offers' to the market operator indicating the amount of energy they are willing to supply and at what price. <http://www.rwe.com/web/cms/en/403722/rwe/press-news/how-the-electricity-price-is-determined>. – a concept known as the 'marginal cost' - Paul Deane, Seán Collins, Brian Ó'Gallachóir, Cherrelle Eid, Rupert Hartel, Dogan Keles and Wolf Fichtner 'Impact on Electricity Markets: Merit Order Effect of Renewable Energies' in Manuel Welsch, Steve Pye, Dogan Keles, Aurélie Faure-Schuyler, Audrey Dobbins, Abhishek Shivakumar, Paul Deane, Mark Howells (eds) *Europe's Energy Transition - Insights for Policy Making Findings* (Elsevier, 2017)

⁸³⁰ Ibid

⁸³¹ Madeleine Cuff, 'Explained: Why Europe's businesses enjoy cheaper energy than the UK - and how to fix it' 5 Feb 2018 <https://www.businessgreen.com/bg/analysis/3025947/explained-why-europes-businesses-enjoy-cheaper-energy-than-the-uk-and-how-to-fix-it>; See Also Jonathan Gaventa, 'Infrastructure networks and the 2030 climate and energy framework' (2013) E3G Working Paper; A Henriot, 'Financing Investment in the European Electricity Transmission Network: Consequences on Long-Term Sustainability of the TSOs Financial Structure' (2013) FSR Policy Brief; Kim Talus *Introduction to EU Energy Law* (Oxford University Press, 2016),

⁸³² Raphael Heffron and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

⁸³³ Interconnection Levels of 15% by 2030 are set out in the EU's 'Communication on strengthening Europe's energy networks' – See Section 2.9.2 – available at https://ec.europa.eu/energy/sites/ener/files/documents/communication_on_infrastructure_17.pdf accessed 10 July 2018

⁸³⁴ Case 8/74, *Procureur du Roi v Dassonville* ECLI:EU:C:1974:82, para 5

⁸³⁵ Case 120/78, *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein* (Cassis de Dijon) ECLI:EU:C:1979:42

⁸³⁶ Case C-3/76 *Kramer* ECLI:EU:C:1976:114

2.10.7 Renewable Energy Directive (2009)⁸³⁷ – Mandatory Targets & Renewables Support Schemes: Renewables Investment Outcome

The Renewable Energy Directive⁸³⁸ is a C&C style instrument, set up under a shared competence⁸³⁹ model between the commission and the member states,⁸⁴⁰ with the national renewable capacity targets determined by the Commission, but with the details of the support schemes⁸⁴¹ left to member states.

In 2007 the Commission published a 'Renewable Energy Road Map'⁸⁴² setting out a strategy for the EU's renewable energy sector. It confirmed the importance of a robust and comprehensive regulatory framework to increase the share of renewable energy consumption. After highlighting the absence of binding capacity targets as an implementation failure of the 2001 Renewable Energy Directive,⁸⁴³ the Commission proposed long-term binding targets on a member state by member state basis in new legislation.⁸⁴⁴ The main outcome of these mandatory national targets⁸⁴⁵ is certainty for investors in renewable energy facilities,⁸⁴⁶ which is needed for long-term investments.⁸⁴⁷ It being stated that, 'without the member

⁸³⁷ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁸³⁸ It should be noted that TFEU was introduced by the Lisbon Treaty on 1 December 2009 – after the adoption of the 2009 Renewable Energy Directive in April 2009. Thus to avoid any debate that might have arisen surrounding the Renewable Energy Directive and its potential to significantly affect a member state's choice of energy sources it was passed unanimously by the EU Council. (See Council of the European Union, Interinstitutional File: 2008/0016 (COD), Brussels, 6 April 2009)

⁸³⁹ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁸⁴⁰ Case C-370/07 *Commission v Council*, ECLI :EU:C:2009:590, para 49

⁸⁴¹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Article 2 Renewable Energy Directive

⁸⁴² COM(2006) 848 'Renewable Energy Road Map: Renewable energies in the 21st century: building a more sustainable future'

⁸⁴³ EU Directive (2001/77/EC) 27 September 2001 'The promotion of electricity produced from renewable energy sources in the internal electricity market' OJ L 283/33

⁸⁴⁴ *Ibid.*, p. 5

⁸⁴⁵ The targets are based on final energy consumption, which avoids converting problems in view of the different energy sources - Doerte Fouquet and Thomas Johannson, 'European Renewable Energy Policy at Crossroads - Focus on Electricity Support Mechanisms' (2008) 36 *Energy Policy*, 4079

⁸⁴⁶ Evanthe Michalena and Jeremy Hills, 'Renewable Energy Issues and Implementation of European Energy Policy: The Missing Generation?' (2012) 45 *Energy Policy*, 201

⁸⁴⁷ Danyel Reiche and Mischa Bechberger, 'Policy Differences in the Promotion of Renewable Energies in the EU Member States' (2004) 32 *Energy Policy* 843, 847

states' support schemes⁸⁴⁸ renewable targets would not be achieved',⁸⁴⁹ which is why the Directive allows different support schemes to focus on specific technologies.⁸⁵⁰ Also when the support schemes were being developed the technology was in its infancy with no clear technology winner.⁸⁵¹

The core of the EU's climate change policy (the so called '20/20/20' goals for 2020),⁸⁵² is set out in the 2009 Renewable Energy Directive:

- A 20% share for renewable energy in the EU total energy mix (including transport).⁸⁵³ With each member state having an individual differentiated target⁸⁵⁴ (Set out in Annex I of the Directive) dependent on the deemed potential of the member state to develop renewable energy schemes⁸⁵⁵ as well as GDP per capita.⁸⁵⁶
- A uniform 10% target for the use of bio-fuels in the transport sector of each member state (although on 28 April 2015, the European Parliament, in plenary session, enacted a revision such that the target is revised to 7% for conventional 'food crop' based bio-fuels).⁸⁵⁷
- A framework to provide certificates of origin so that end consumers could be ensured as to the source of the energy consumed.⁸⁵⁸

As has been said, despite reductions in the capital cost of renewable sources,⁸⁵⁹

⁸⁴⁸ 'support scheme' means any 'instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁸⁴⁹ Fernando Hervás and Soriano, Fulvio Mulatero, 'EU Research and Innovation (R&I) in renewable energies: The role of the Strategic Energy Technology Plan (SET-Plan)' (2011) 39(6) Energy Policy, 3582; See also Kyriakos Maniatis and Stefan Tostmann, 'EU Technology Strategy on Bioenergy: From Blue-Sky Research to Targeted Technology Development' (2010) Renewable Energy Law & Policy Review 169, 173; See also Karl Mallon, *Renewable Energy Policy and Politics: A Handbook for Decision-Making* (Earthscan, 2006) 1-2; See also Com (2009) 519 'Investing in the Development of Low Carbon Technologies' available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0519:FIN:EN:PDF> accessed on 9 August 2017.

⁸⁵⁰ Sophia Ruester, Sebastian Schwenen, Matthias Finger and Jean-Michel Glachant, 'A Post-2020 EU Energy Technology Policy: Revisiting the Strategic Energy Technology Plan' (2014) 66 Energy Policy 209, 212 and 216

⁸⁵¹ Sergey Mityakov and Margarita Portnykh, 'The Infant Industry Argument and Renewable Energy Production' (2012) Marshall Institute Working Paper

⁸⁵² COM (2008) 30, '2020 by 2020 Europe's Climate Change Opportunity' p 7-8; See Also COM(2007) 2 'Limiting Global Climate Change to 2 degrees Celsius The way ahead for 2020 and beyond'; See also COCL 5 17271/1/08 'Presidency Conclusions of the Brussels European Council (11 and 12 December 2008)' para 5

⁸⁵³ Directive 2009/28/EC Renewable Energy Directive, Article 3(1)

⁸⁵⁴ Harald Winkler and Lavanya Rajamani 'Common, but Differentiated, Responsibilities and Respective Capabilities in a Regime Applicable to All' (2014) 14(1) Climate Policy 50

⁸⁵⁵ Directive 2009/28/EC Renewable Energy Directive, Annex 1

⁸⁵⁶ Aviel Verbruggen and Volkmar Lauber, 'Basic Concepts for Designing Renewable Electricity Support Aiming at a Full-scale Transition by 2050' (2009) 37 Energy Policy 5732, 5734

⁸⁵⁷ Directive 2009/28/EC Renewable Energy Directive, Article 3(4)

⁸⁵⁸ Directive 2009/28/EC Renewable Energy Directive Article 15

⁸⁵⁹ The Hornsea 3 Project was found to bid 57.5£/MWh in the 2017 UK Renewable Auction – a price comparable with coal and gas generation, however, this is very much a future price and not the cost derived from operational

operational renewable energy, in most cases, costs more than energy from conventional thermal sources (coal & gas). To transition to a position where renewable sources predominate, the 2009 Renewable Energy Directive⁸⁶⁰ continued with the themes set out in the 2001 Directive that, EU member states may support the deployment of renewable energy using support schemes⁸⁶¹ such as quota obligations with green certificates, feed-in tariffs/premiums, tax exemptions and investment grants,⁸⁶² all designed to produce and increase 'investor confidence'.⁸⁶³

Although, in designing a support scheme, member states seem to have followed the assertion that direct regulation and associated market rules are the most effective means of facilitating any development.⁸⁶⁴ Member states are granted a wide discretion in the implementation of renewable electricity support schemes. Directive Article 3(2) simply requires that member states introduce measures designed to ensure that energy from renewable sources reaches or exceeds the Directive Article 3(3) binding capacity targets detailed in Annex I. Most states, like Germany,⁸⁶⁵ have chosen a feed-in tariff approach, whilst a few, like Sweden,⁸⁶⁶ have chosen a tradeable certificate scheme.

It should be noted that fixed feed-in tariff systems, where all generating facilities accepted by a member state obtain the same price enhancement, have been closed to new entrants across the EU from 2014,⁸⁶⁷ with an auction system being put in place. With new schemes being asked to bid a generation price, only the most efficient and cost-effective schemes will be constructed.⁸⁶⁸ It has been said

wind farms - Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting
⁸⁶⁰ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁸⁶¹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁸⁶² Directive 2009/28/EC Renewable Energy Directive Article 2(k)

⁸⁶³ Directive 2009/28/EC Renewable Energy Directive, Recital 25

⁸⁶⁴ Barry Solomon and Karthik Krishna, 'The Coming Sustainable Energy Transition: Histories, Strategies and Outlook' (2011) 39(11) Energy Policy, 7422, 7428; See Also Staffan Jacobsson, Anna Bergek, Dominique Finon, Volkmar Lauber, Catherine Mitchell, David Toke, Aviel Verbruggen, 'EU Renewable Energy Support Policy: Faith or Facts?' (2009) 37 Energy Policy 2143

⁸⁶⁵ German Act, Erneuerbare Energien Gesetz (2000) - Renewable Energy Sources Act – Granting Priority to Renewable Energy Sources (German Feed-in-Tariff)

⁸⁶⁶ Swedish Act - Electricity Certificates Act (2003)

⁸⁶⁷ European Commission Memo 14/276 (2014) – Requiring New Renewable Facilities to bid for a support scheme contract

⁸⁶⁸ C Klessman, 'Experience with renewable electricity (RES-E) support schemes in Europe: Current status and recent trends Presentation' (2014) http://www.leonardoenergy.org/sites/leonardo-energy/files/documents-and-links/ecofyssupport_policies_2014_04.pdf (accessed 3 September 2016)

that this revised system could mean that some of 'renewable energy's pioneers' may leave the sector which would impact on further penetration of renewable energy and EU competitiveness.⁸⁶⁹

The ability to put in place national renewable support schemes⁸⁷⁰ to suit the achievement of the national capacity targets⁸⁷¹ contrasts with the centrally organised EU-ETS and the harmonised level of bio-diesel contained in the Directive. The reason behind this contrast seems to be political: with member states reluctant to shift their decision-making power to the EU in relation to electricity or allow a universally applicable support mechanism.⁸⁷² This is evidenced by the fact that some ten years on, member states are still highly supportive of nationally focussed renewable support schemes.⁸⁷³

It should be noted that the renewables support schemes which all enhance revenues, in one form or another, would be in direct conflict with EU state aid law (Article 107(1) TFEU) as it is distortive of competition without the applicable Commission practice guidelines allowing state aid for renewable electricity in certain circumstances (General Block Exemption Regulation (GBER)⁸⁷⁴ and 2014 Guidelines on State Aid for Environmental Protection & Energy).⁸⁷⁵

Also the Renewable Energy Directive explicitly permits member states to restrict their renewables support schemes⁸⁷⁶ to projects within their sovereign territory in direct contravention of the free movement of goods (a theme returned to

⁸⁶⁹ Jeremy Hills and Evanthe Michalena, 'Renewable energy pioneers are threatened by EU policy reform' (2017) 108 *Renewable Energy*, 26

⁸⁷⁰ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁸⁷¹ Directive 2009/28/EC Renewable Energy Directive, Annex 1

⁸⁷² Marjan Peeters, 'Emissions trading as a new dimension to European Environmental Law: The political agreement of the European Council on carbon allowance trading', (2003) 12(3) *European Environmental Law Review*, 82

⁸⁷³ EU Commissions's consultation on the future Renewable Energy Directive showed little support for a harmonised EU-wide support scheme: see the assessment at <https://ec.europa.eu/energy/en/consultations/preparation-new-renewable-energy-directive-period-after-2020>, accessed 7 July 2018

⁸⁷⁴ EU Regulation No 1588/2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, OJ 2015 L 248/1, and European Commission, Regulation (EU) No 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. General Block Exemption Regulations for State aid ('GBER')

⁸⁷⁵ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01

⁸⁷⁶ 'support scheme' means any 'instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

in Section 3.5).⁸⁷⁷ This provision was considered necessary due to member states' need to control the costs and effects of the support schemes according to their own potential.⁸⁷⁸ Also the national implementation of the Renewable Energy Directive is believed to facilitate a renewable electricity support scheme highly focussed on the needs of that member state's energy sector.⁸⁷⁹

The nationally focussed support scheme is the model chosen by member states with only one exception, that being the joint green certificate scheme (compliant with Directive Article 3(3)) operated by Norway and Sweden established in January 2012,⁸⁸⁰ with a termination date of 2035. The scheme was put together as Norway considered its market to be too small to function efficiently on its own.⁸⁸¹ The joint scheme allows price discovery⁸⁸² over a wider number of renewable facilities and as such is said to provide cost efficiency⁸⁸³ and stability to consumers.⁸⁸⁴

The Directive (Article 6) allows the transfer of renewable output from one-member state to another. The Commission stating that this mechanism would appeal to member states that were able to sell renewable energy that was found to be above that member state's target, to another member state.⁸⁸⁵ Directive Articles 7 to 10 provide for joint projects relating to the production of renewable energy. The Directive in Article 7(4) makes it clear that the statistical transfer of energy and the agreements surrounding the joint project should not extend beyond 2020. Due to the long-term nature of most energy investment projects this would constrain the payback period for investment, in that such schemes would not reach the investment

⁸⁷⁷ Directive 2009/28/EC Renewable Energy Directive, Article 3(3); See Also Hans Vedder, Anita Rønne, Martha M Roggenkamp and Íñigo del Guayo, 'EU Energy Law' in Martha Roggenkamp, Catherine Redgwell, Anita Rønne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

⁸⁷⁸ Ibid, Recital 25

⁸⁷⁹ Council of European Energy Regulators, 'Implications of Non-harmonised Renewable Support Schemes A CEER Conclusions Paper' (2012) C12-SDE-25-04b, 13

⁸⁸⁰ Corinna Klessmann, Erika de Visser, Fabian Wigand, Malte Gephart, Gustav Resch and Sebastian Busch, 'Cooperation between EU Member States under the RES Directive. Task 1 Report (2014)', available at http://ec.europa.eu/energy/renewables/studies/doc/2014_design_features_of_support_schemes_task1.pdf accessed 1 July 2016, 2; See also Henrik Klinge Jacobsen, Lise Lotte Pade, Sascha Thorsten, Schröder Lena Kitzing, 'Cooperation Mechanisms to Achieve EU Renewable Targets' (2014) 63 *Renewable Energy* 345, 351; See also Jean-Michel Glachant and Sophia Ruester, 'The EU Internal Electricity Market: Done Forever?' (2014) 31 *Utilities Policy* 221, 228

⁸⁸¹ Ibid p 4

⁸⁸² Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHyG> accessed 30 March 2018

⁸⁸³ Christian Bussard, Melchior Moosa, Ricardo Alvarez, Philipp Wolf, Tjark Thien, Hengsi Chen, Zhuang Cai, Matthias Leuthold, Dirk Uwe Sauera and Albert Moser, 'Optimal Allocation and Capacity of Energy Storage Systems in a Future European Power System with 100% Renewable Energy Generation' (2014) 46 *Energy Procedia*, 40

⁸⁸⁴ Ibid p 7

⁸⁸⁵ COM (2011) 'Review of European and National Financing of Renewable Energy in Accordance With Article 23(7) of Directive 2009/28' SEC (2011) 131 Final 7-8

hurdle rates of most utility companies and therefore the Directive has effectively rendered one of its own facilities useless for all but a very few existing projects.

The Directive does allow for co-operation with countries outside the EU (Article 9(8)). An example of this kind of co-operation is the Mediterranean solar plan. The plan has facilitated the construction of solar renewable plants in Morocco with the electricity being exported to Spain.⁸⁸⁶ The detailed interpretation of these provisions was examined in *Green Network*⁸⁸⁷ (See Section 3.5.3), where the CJEU has effectively placed the Commission in the path of any cooperation scheme and in so doing has again rendered such provisions useless as the 8 year term of the Directive (2012 to 2020) means there is not really time for protracted international treaty negotiations.

The establishment of renewable energy projects are often covered by many EU and national laws intended to protect the environment against potential adverse effects and exert development control.⁸⁸⁸ Article 13 of the Directive sets out that member states must adopt administrative procedures that do not restrict the development of renewables projects. Article 13 setting out specific objectives for the national renewable regulations with regards to the streamlining of a proportionate⁸⁸⁹ permitting process, criteria confirmed by the CJEU in *Regione Puglia*.⁸⁹⁰

Directive Article 15 requires member states to put in place arrangements for the issuing of certificates of origin. According to Directive Article 2(j) these certificates provide '*proof to a final customer that a share or quantity of energy was produced by renewable sources*'.

The provisions of Directive Article 16 are also significant, in so far as the Article requires that the renewable generation facilities are given priority network

⁸⁸⁶ EU Neighbourhood information Centre, 'The Mediterranean Solar Plan', 2010 available at www.enpi-infor.eu/files/interview/Mediterranean%20Solar%20Plan.pdf accessed 15 September 2015

⁸⁸⁷ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

⁸⁸⁸ For example Directive 92/43 15 May 1992 'the conservation of natural habitats and of wild fauna and flora' OJ L206/7; Directive 2009/125 31 October 2009 'establishing a framework for the setting of eco-design requirements for energy-related products' OJ L285/10; Directive 2008/56 17 June 2008 'establishing a framework for community action on marine water quality in the field of marine environmental policy' OJ L164/19; Directive 2009/147 30 November 2009 'the conservation of wild birds' OJ L20/7; Regulation 2493/2000/EC 7 November 2000 'measures to promote the full integration of the environmental dimension in the development process of developing countries' OJ L288/1

⁸⁸⁹ Meaning that 'measures should not exceed the limits of what is appropriate and necessary for attaining the objective pursued, and that where is a choice between several appropriate measures must be had to the least onerous' Case T-419/03 *Altstoff Recycling Austria v Commission* ECLI:EU:T:2011:102, para 134; Also 'proportionality' or 'being proportionate' can be considered an ideal or a goal rather than being a principle with the same status as 'polluter pays' or the 'precautionary' principle. – see Jonathon Verschuuren, 'Sustainable Development and the Nature of Environmental Legal Principles' (2006) (1)9 *Potschefstroom Electricity Law Journal*, 17; See Also Jurian Langer and Wolf Sauter 'The Consistency Requirement in EU Law' (2017) 39 *Journal of European Law*

⁸⁹⁰ Case C-2/10 *Azienda Agro-Zootecnica Franchini Sari, Eolica di Atlamura Srl v Regione Puglia* ECLI:EU:C:2011:502

access.⁸⁹¹ This obligation is split into two parts, (i) the right of priority network connection⁸⁹² (this practice also being undertaken in conjunction with Directive Article 13 and the establishment of transparent administrative procedures for the conclusion of network connection processes), and (ii) the generation dispatch rules for each member state are to give priority dispatch⁸⁹³ to renewable electricity. This means that renewables and nuclear (for technical reasons regarding electron propagation in the reactor) are effectively dispatched without the normal merit order considerations. As has been stated above, this means that renewable generation is outside the market and, due to priority dispatch, is simply a reducing factor on the amount of demand available over which conventional generation competes to supply – for renewables the electricity market has no meaning.

Thus, priority dispatch is in direct conflict with state aid (Article 107(1) TFEU) in that it segments the market to the detriment of competition (See Section 2.10.6). Also, priority dispatch for renewables could be seen as applying dissimilar conditions to equivalent transactions, in that the dispatching of coal and gas fuelled generation capacity is based on price and certain technical characteristics of the capacity in question, a direct conflict with state aid (Article 107(1) TFEU) as it is distortive of competition favouring the production of certain goods (namely renewable electricity compared to electricity produced by other technologies).

Directive Article 16 also states that member states are to ensure that transmission and distribution system operators set up and make rules relating to the bearing and sharing of the costs of adaptations of the network to accommodate renewables.

This aspect of the Directive is where member states have diverged most significantly, with some member states having a fully socialised⁸⁹⁴ network connection scheme with cost being borne exclusively by the end user (e.g.

⁸⁹¹ Joel Eisen, Jim Rossi, David Spence and Hannah Wiseman Energy, Economics and the Environment: Cases and Materials (West Academic, 2015), 625

⁸⁹² Priority network access is the obligation placed on member states to establish transparent and proportionate administrative procedures for the conclusion of network connection for renewable electricity facilities in accordance with Article 13 and 16 of the Renewable Energy Directive

⁸⁹³ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

⁸⁹⁴ The term 'socialisation' within the electricity industry describes a process whereby costs of the function or activity is spread across all consumers and as such is seen an activity of general economic interest - Michael Rivier, Ignacio Pérez-Arriaga and Luis Almos 'Electricity Transmission' in Ignacio Pérez-Arriaga (ed) *Regulation of the Power Sector* (Springer, 2014), 294

Germany),⁸⁹⁵ whereas others employ a system whereby directly associated connection assets are charged to the renewable facility developer with only deep infrastructure assets being socialised (e.g. United Kingdom).⁸⁹⁶

Thus, Directive Article 16 can be seen to be in direct conflict with Article 107 TFEU (state aid) as the schemes of certain member states' exempts renewable generation from costs which they would be faced with in the normal course of business (*GEMO*⁸⁹⁷ and *Essent 2* (embedded benefits)).⁸⁹⁸

Despite the Directive having several direct conflicts with the TFEU (free movement, state aid etc.) the success of the 2009 Renewable Energy Directive was displayed by the EU at COP 21.⁸⁹⁹ The EU stated that in 2015, 27% of the EU's electricity was derived from renewables,⁹⁰⁰ and this is expected to reach up to 50% by 2030.⁹⁰¹ The EU also stated that its economy had grown since 1990 but emissions of greenhouse gases have fallen thanks to renewable energy and energy efficiency policies. Compared to 1990, European GDP had increased by 46% but total carbon emissions decreased by over 23%,⁹⁰² effectively halving the 'emissions intensity' per euro of GDP.⁹⁰³ Therefore, when assessed, against a criterion of efficiency of distribution of costs between different stakeholder groups, the EU considered the policy a success.⁹⁰⁴

On the other hand it has also been claimed that support for renewable electricity deployment, negatively interacts with the EU-ETS, having a dampening effect on carbon emission prices, which favours the dirtiest technologies (e.g. coal).⁹⁰⁵ When this effect is combined with the similar effect of the Energy Efficiency Directive in reducing overall energy demand and the over allocation of emissions allowances with the EU-ETS, it can be seen that the Renewable Energy Directive, whilst facilitating the development of renewable energy technology, is not the policy

⁸⁹⁵ Edith Bayer, 'Report on the German power system' (2015) Agora Energiewende, 25 available at https://www.agora-energiewende.de/fileadmin/downloads/publikationen/CountryProfiles/Agora_CP_Germany_web.pdf accessed 23 January 2018

⁸⁹⁶ National Grid Electricity Transmission, 'The Statement of Use of System Charges' - The levying of charges associated with connection assets undertaken by the United Kingdom network charging model has, for example, prevented the development of wide scale renewable projects in the western isles of Scotland; where wind conditions are the same as would be found offshore, but development costs are lower being onshore yet with the transmission reinforcement being priced at broadly £1bn this has effectively killed the project - <http://www.stornowaywind.co.uk/the-location/>

⁸⁹⁷ Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622

⁸⁹⁸ Case C-492/14 *Essent Belgium NV v Vlaams Gewest* ECLI:EU:C:2016:732

⁸⁹⁹ Miguel Arias Cañete (EU Commissioner for Climate Action & Energy). 'The European Union Leading In Renewables' available at http://europa.eu/rapid/press-release_SPEECH-18-5909_en.htm accessed 2 July 2018

⁹⁰⁰ European Commission, 'EU energy in figures, Statistical Pocketbook', 2015

⁹⁰¹ European Commission, '2030 Energy Efficiency Impact Assessment' (SWD(2014) 255 final)

⁹⁰² European Commission, 'State of the Energy Union 2015' (COM(2015) 572 final)

⁹⁰³ European Commission, 'EU energy in figures, Statistical Pocketbook', 2015

⁹⁰⁴ Vicki Duscha and Pablo del Rio, 'An economic analysis of the interactions between renewable support and other climate and energy policies' (2017) 28(1–2) *Energy & Environment*, 11

⁹⁰⁵ Pablol del Rio, 'Why does the combination of the European Union Emissions Trading Scheme and a renewable energy target makes economic sense?' (2017) 74 *Renewable and Sustainable Energy Reviews*, 824

panacea it is held out to be by the Commission. This combination of policy objectives brings their own problems with the negative interaction between renewable energy deployment and the carbon price in the EU-ETS requiring appropriate coordination of regulatory instruments to create a fully integrated regulatory framework.⁹⁰⁶

Thus, in considering the satisfaction of the ‘trilemma’⁹⁰⁷ criteria, the Directive’s ability to pass the sustainability criteria is good in that it has facilitated the development of a considerable volume of renewable generation capacity. The Directive also can be seen to have made a qualified success of increasing energy security and as such reliability of the electricity network as fuel supply chains are shortened. The area where the Directive can be considered to have only limited success is that of affordability, here the level of subsidy given to renewable electricity has increased the overall cost of electricity due to the charging of levies to end consumers (considered further in Section 3.5.9 to 3.5.13). Also, by its very nature the Renewable Energy Directive is C&C in style and thus does not take account of the cost for an individual member state to implement the renewable generation capacity targets set out in the Directive.

2.11 Road Map to the Future of Climate Change

The future of EU renewable electricity is heavily influenced by the EU’s international commitments via the UNFCCC,⁹⁰⁸ the Kyoto Protocol⁹⁰⁹ and the Paris COP 21⁹¹⁰ Agreement (See Section 2.5). The section below considers the future of the renewable electricity regulatory framework in the light of the EU’s commitments under these instruments.

Issues surrounding renewable electricity investment levels brought about by the EU’s commitments to COP 21 were a theme discussed by respondents to the empirical research.

2.11.1 EU 2030 Climate Framework – COP 21 Commitments

EU has decoupled carbon emissions from economic growth as, compared to 1990, European GDP had increased by 46% but total carbon emissions decreased by over

⁹⁰⁶ Ibid

⁹⁰⁷ Trilemma of reliability, sustainability and affordability – See David Newbury ‘Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma’ [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

⁹⁰⁸ https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf

⁹⁰⁹ <https://unfccc.int/sites/default/files/kpeng.pdf>

⁹¹⁰ https://unfccc.int/sites/default/files/english_paris_agreement.pdf

23%.⁹¹¹ The EU, has presented a renewed ambition 2030, through the 'Clean Energy for All Europeans' policy package proposals.⁹¹²

In setting out its goals for 2030, the EU has said that it seeks to reduce emissions by a challenging⁹¹³ 40% by 2030⁹¹⁴ and by 80% to 95% by 2050 compared to 1990, with peak emissions in 2020.⁹¹⁵

Much of this reduction is forecast to come from a focussed carbon trading scheme, with allowances being subject to frequent review against the then current production levels.⁹¹⁶ A refocused EU-ETS will give the Commission a greater influence in the governance of renewable electricity due its competence⁹¹⁷ over the EU-ETS and EU level activities. Also, the expansion of the EU-ETS will shift the balance of the renewables regulatory framework to an increased use of market-based instruments.

Additionally, the 2030 renewable energy target within the EU 2030 Framework is set at 27%, with a 27% target also being ascribed to energy efficiency. However, this will be subject to review in 2020 to take account of then available technology and the wider implementation of smart metering across the EU.

The EU has acknowledged that the energy sector requires a long-term stable regulatory framework against which to undertake investments,⁹¹⁸ when the industry's perception of the long-term stability of the sector is negative. This being due to the retrospective reductions of the feed-in tariff in the Spanish (*Charanne*),⁹¹⁹ Italian (*Scat Punti Vendita*)⁹²⁰ and UK (*Breyer*)⁹²¹ cases where it was held that

⁹¹¹ European Commission, 'State of the Energy Union 2015' (COM(2015) 572 final

⁹¹² COM(2016) 860 30 November 2016 'Clean Energy For All Europeans'

⁹¹³ Raphael Heffron and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

⁹¹⁴ EU COM 482/2016 'on binding annual carbon emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement' available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0482> accessed 1 May 2018, Recital 1

⁹¹⁵ SWD(2014) 15 final, 'A policy framework for climate and energy in the period from 2020 up to 2030' Section 2.11.1

⁹¹⁶ Vicki Duscha, Arnaud Fougeyrollas, Carsten Nathani, Matthias Pfaff, Mario Ragwitz, Gustav Resch, Wolfgang Schade, Barbara Breitschopf and Rainer Walz, 'Renewable energy deployment in Europe up to 2030 and the aim of a triple dividend' (2016) 95 *Energy Policy*, 314

⁹¹⁷ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁹¹⁸ Directive 2009/28/EC Renewable Energy Directive, Recital 25

⁹¹⁹ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf

⁹²⁰ Decision 10/2015, *Scat Punti Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

⁹²¹ *Department of Energy & Climate Change v Breyer Group PLC & Others*, [2015] EWCA Civ 408

member states are free to determine the level of their support schemes⁹²² and to manage these schemes as they see best (See Section 3.5.8).⁹²³

The right to regulate and the constraints on this principle was a theme brought out by several of the Developer Operator respondents during the empirical research.

The EU's 2020 to 2030 Road Map brings into sharp focus the concerns the Commission has that investments will not be made and that many of the current thermal coal and gas plants will still be operating in 2030 despite the requirements of the Industrial Emissions Directive⁹²⁴ (see Section 2.10.1).⁹²⁵

The 2030 Road Map recognises that increased interconnectivity of energy networks will be required. The EU has stated that interconnection is urgently required in the Baltic States, Portugal and Spain. The remote member states of Malta, Cyprus and Greece also need interconnection. However, their distance to the rest of Europe means that the only credible way of achieving this is via HVDC links, which will be expensive and potentially not justified by the resulting carbon reductions.

The need for a robust programme, whereby interconnection capacity is increased across the EU and the network operators fulfil their network development obligations was a theme brought out by the Developer Operators during the empirical research.

On 17 January 2018, the European Parliament adopted the 2030 revision of the Renewable Energy Directive, which includes draft measures to raise the share of renewable energy to 35% by 2030 on a capacity basis.⁹²⁶ On the 14 June 2018, the EU announced a new provisional target for renewable energy to make up at least 32% of gross final energy consumption in 2030 (increased from 27% in the 2030

⁹²² 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁹²³ Graham Coop and Bernhard Maier 'The External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds.), *Legal Aspects of EU Energy Regulation*, (2nd ed, Oxford University Press, 2016), 80 provides a discussion of the right to regulate and investor protection contained in the EU-Canada Comprehensive Economic and Trade Agreement, the EU-Singapore Free Trade Agreement and the Transatlantic Trade and Investment Partnership

⁹²⁴ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

⁹²⁵ SWD(2014) 15 final, "A policy framework for climate and energy in the period from 2020 up to 2030", Section 2.11.1

⁹²⁶ It should be noted that generation capacity does not equate to energy production. A renewable facility will not be able to operate 24/7 due to the need for maintenance and with regards to renewables generated output is dependent on wind and solar resources being available – in broad terms a wind turbine operates for about 35% of the year.

Road Map).⁹²⁷ The January 2018 plans also set an 'energy-efficiency first' principle, meaning energy efficiency measures will be prioritised in all EU energy planning, policy and investment decisions and outlined a 1.3% yearly increase of renewables in heating and cooling installations starting from 2021.

The 2030 Framework is ambitious, especially if the renewable energy targets are fully ratified. The 2030 targets will require considerable changes to electricity network and market design,⁹²⁸ in that new transmission assets will need to take account of the different locations renewable facilities have, compared to coal, gas and nuclear sites, and the need to manage the dispatch of intermittent renewable generation facilities.⁹²⁹

However, as indicated, fulfilling the EU's 2030 targets might not be enough to meet the commitments made by the EU in relation to the UNFCCC at COP 21.

It has been said that decarbonising electricity generation alone will not be enough to meet COP 21 climate goals, with carbon emission reductions being required from manufacturing industry, transport, building sectors, as well as a heavy reliance being placed on removal technologies that extract CO₂ from the atmosphere, which are '*uncertain and unproven on a large scale*'⁹³⁰ and would be regulated by the Carbon Capture & Storage Directive⁹³¹ (See Section 2.10.5).

One of the biggest uncertainties is the potential electrification of heating across the EU. Currently most of the space heating is undertaken by gas,⁹³² however, if this is prohibited or even significantly curtailed then electricity demand growth will outstrip the demand reductions made possible by the Energy Efficiency Directive several times over.⁹³³ The only credible solution to this level of demand growth, whilst still maintaining COP 21 Paris Climate Agreement obligations is renewable generation.⁹³⁴

⁹²⁷ http://europa.eu/rapid/press-release_STATEMENT-18-4155_en.htm accessed 15 June 2018

⁹²⁸ Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) Legal Aspects of EU Energy Regulation (Oxford University Press, 2016), 25

⁹²⁹ David Newbery, Michael Pollitt, Robert Ritz and Wadim Strielkowski, 'Market design for a high-renewables European electricity system' (2018) 91 Renewable and Sustainable Energy Reviews, 695

⁹³⁰ Hayley Dunning, Joeri Rogelj and Gunnar Luderer, 'Greener energy generation alone will not help us reach climate goals' [2018] Grantham Institute of Climate Change and Environment Working Paper

⁹³¹ Council Directive 2009/31/EC 23 April 2009 on the geological storage of carbon dioxide OJ L140/114

⁹³² Ofgem 'The Decarbonisation of Heat' [2016] 3 available at https://www.ofgem.gov.uk/system/files/docs/2016/11/ofgem_future_insights_programme_-_the_decarbonisation_of_heat.pdf accessed 1 September 2018

⁹³³ Pranab Baruah, Nicholas Eyre, Meysam Qadrdan, Modassar Chaudry, Simon Blainey, Jim Hall, Nicholas Jenkins and Martino Tran, 'Energy system impacts from heat and transport electrification' (2014) 167(3) Proceedings of the Institution of Civil Engineers

⁹³⁴ Steve Pye, Francis Li, James Price and Brigit Fais, 'Achieving net-zero emissions through the reframing of UK national targets in the post-Paris Agreement era' (2017) 2(3) Nature Energy

Therefore, a clear and concise renewables regulatory framework is vital to the achievement of these targets and the enhanced potential for compliance in a co-operative manner without the need for judicial action.⁹³⁵

2.11.2 EU 2050 Climate Policy Roadmap⁹³⁶ – 80% Renewables

The EU has developed a long-term decarbonisation vision for the period 2030 to 2050, with carbon reductions of 80% to 95% compared to 1990 levels by 2050⁹³⁷ without compromising growth and prosperity across the EU or energy security.⁹³⁸

In order to achieve its 2050 targets the EU has set intermediate goals of a 60% reduction in carbon emissions by 2040.⁹³⁹ The Commission acknowledged the development in generation technology that would be necessary to achieve the 2050 target and that in many respects this technology is not available today.⁹⁴⁰ The EU also seeks to reduce its dependency on imported energy and increasing energy security, therefore producing renewable electricity and transport fuel within the EU will achieve this goal.⁹⁴¹

To achieve the 2050 renewables production targets, it is important to start preparations promptly as investors are considered to need a stable policy framework, some 15-20 years ahead.⁹⁴²

The 2018 Special Report⁹⁴³ from the Intergovernmental Panel on Climate Change (IPCC) has said that limiting global warming to 1.5°C would require ‘*rapid and far-reaching*’⁹⁴⁴ transitions and with the frequency of extreme weather increasing if applicable steps are not taken now.

⁹³⁵ Jutta Brunnée, ‘Promoting compliance with multilateral environmental agreements’ in Jutta Brunnée, Meinhard Doelle and Lavanya Rajamani (eds) *Promoting Compliance in an Evolving Climate Regime* (Cambridge University Press, 2012) 38

⁹³⁶ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

⁹³⁷ European Council & Presidency Conclusions 29 & 30 October 2009, available at www.consilium.europa.eu/doc/srv?l=en&f=st%2015265%202009%20INIT accessed 15 September 2015

⁹³⁸ Penelope Crossley, ‘The role of renewable energy law and policy in meeting the EU’s energy security challenges’ in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁹³⁹ EU COM 482/2016 ‘on binding annual carbon emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement’ available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0482> accessed 1 May 2018, Recital 1

⁹⁴⁰ Comm (2011) 112, ‘A roadmap for moving to a competitive low carbon economy in 2050’ p 6

⁹⁴¹ *Ibid*, p 11

⁹⁴² Jaap Jansen and Martine Uytendil, ‘A Fragmented Market on the Way to Harmonisation? EU Policy Making on Renewable Energy Promotion’ (2004) 8(1) *Energy for Sustainable Development* 93, 105.; See also Dorte Fouquet, ‘Policy Instruments for Renewable Energy – From a European Perspective’ (2013) 49 *Renewable Energy* 15

⁹⁴³ IPCC Special Report ‘Global Warming of 1.5 °C an IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways’ 48th Session of the IPCC, Incheon, Republic of Korea, 6 October 2018 available at <http://www.ipcc.ch/report/sr15/> Accessed 8 October 2018

⁹⁴⁴ *Ibid*, Section C2

The IPCC has stated that by 2050 renewables will have to account for 70-85% of global electricity generation, coal's share reducing 'close to zero'.⁹⁴⁵ Such a transition in the generation capacity portfolio will lead to investment in emissions mitigating energy technology averaging around \$900 bn/year from 2015 to 2050.⁹⁴⁶

The \$900bn/year investment levels should be compared to the just over \$300bn/year invested for the period 2013 to 2018, with investment in wind increasing and solar decreasing due to technology developments, indicating there is a considerable amount of catching up to do.⁹⁴⁷

Again, the level of investment needed, and the certainty required by utility companies to undertake this level of investment was a theme brought out by several respondents during the empirical research.

2.12 Harmonisation of Renewables Regulatory Framework – Member States Say No

An EU harmonised measure is a 'top down' form of regulation since the measures are adopted by the EU's institutions and member states in the form of legally binding obligations – sometimes referred to as the 'community method',⁹⁴⁸ thus removing obstacles to the single market.

The removal of national barriers to the cross-border trade in goods and services is a long-term EU goal (Articles 34 and 36 TFEU).⁹⁴⁹

The CJEU defined harmonisation as regulation at the EU level that removes the opportunity for member states to adopt further measures in national legislation.⁹⁵⁰

The EU's main harmonisation competences can be found in Articles 114 and 115 TFEU and have as their objective the establishment and functioning of the internal market.⁹⁵¹

⁹⁴⁵ Ibid, Section C2.2

⁹⁴⁶ Ibid, Section C2.6

⁹⁴⁷ Bloomberg New Energy Finance 16 January 2019 available at https://www.bloomberg.com/subscriptions?utm_source=google&utm_medium=cpc&utm_campaign=1494479466&utm_term=%2Bbloomberg%20%2Bfinance&qclid=Cj0KCQiA-JXiBRCPARIsAGqF8wUJoL5wai3pNG69cQ-A4u9Sh4UiBL-OSsF7yS6qbFUE9kk4MbbjSjMaAv1xEALw_wcB accessed 19 January 2019

⁹⁴⁸ P de Schoutheete, 'The Evolution of Intergovernmental Cooperation in the European process' [2006] Challenge Europe 2 Egmont European Affairs Publication (Working Paper)

⁹⁴⁹ European Commission, 'Guide to the implementation of directives based upon the New Approach and the Global Approach', Article 8, http://ec.europa.eu/enterprise/policies/single-market-goods/files/blue-guide/guidepublic_en.pdf (accessed 15 September 2016)

⁹⁵⁰ Case 148/78 *Pubblico Ministero v Ratti* ECLI:EU:C:1979:110, para 26f

⁹⁵¹ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516; See also Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 5

An EU wide harmonised renewables support scheme⁹⁵² would remove price and regulatory distortions between member states.⁹⁵³ Via a single support scheme across the EU, harmonisation would lead to an improved degree of standardisation and clarity of renewable electricity costs (leaving only transmission costs on a cost per distance travelled basis as the differentiator between renewable electricity facilities) to facilitate investment decisions.⁹⁵⁴

It is argued that a non-harmonised support schemes adds unnecessary complexity and uncertainty, leading to a higher cost of capital, less cost-effectiveness and ultimately higher prices for the consumer.⁹⁵⁵ Overall, non-harmonisation is said to interfere with the functioning of the electricity market and to distort the cross-border wholesale market price of electricity.⁹⁵⁶

Minimal harmonisation has been the *modus operandi* for environmental regulation since environmental issues became part of the political and legal landscape of the EU.⁹⁵⁷

The development of a harmonised EU renewables support scheme has been considered for some time.⁹⁵⁸ In 2005 the EU published 'The Support of Electricity from Renewable Energy Sources',⁹⁵⁹ which considered support scheme harmonisation, concluding, that due to widely varying potentials for renewable electricity facilities across member states harmonisation was unachievable in the short term.⁹⁶⁰ Harmonisation also being considered unlikely for political reasons⁹⁶¹

⁹⁵² 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁹⁵³ Jaap Jansen and Martine Uytterlinde, 'A Fragmented Market on the Way to Harmonisation? EU Policy Making on Renewable Energy Promotion' (2004) 8(1) *Energy for Sustainable Development* 93, 103

⁹⁵⁴ CEER, 'Implications of non-harmonised renewable support schemes' (June 2012), available at:

http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/Tab/C12-SDE-25-04b_SDE%20NHSS-Conclusions_18-Jun-2012.pdf. (accessed 15 September 2016)

⁹⁵⁵ CEER, 'Implications of non-harmonised renewable support schemes' (June 2012), available at:

http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/Tab/C12-SDE-25-04b_SDE%20NHSS-Conclusions_18-Jun-2012.pdf, at 14 accessed 15 September 2016; See Also Hagenbuch Tyler, 'Establishing an Aggressive Legal Framework for the Future of Wind Energy in Europe' (2012) 42 *Vanderbilt Journal of Transnational Law* 1595, 1620

⁹⁵⁶ *Ibid*, at 19

⁹⁵⁷ Nicolas de Sadeleer, 'Principle of Subsidiarity and the EU Environmental Policy' (2012) 9 *Journal for European Environmental & Planning Law* 63, 69

⁹⁵⁸ Angus Johnston & Guy Block, *EU Energy Law* (1st edn. Oxford University Press, 2012), 338

⁹⁵⁹ Com (2005) 627, 'The Support of Electricity from Renewable Energy Sources' available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0627:FIN:EN:PDF> accessed on 31 July 2017;

⁹⁶⁰ *Ibid*, 11

⁹⁶¹ Marc Ringel, 'Fostering the use of Renewable Energies in the European Union: The Race between Feed-in-Tariffs and Green Certificates' (2006) 31(1) *Renewable Energy*, 13-14

and the difficulty in drafting an applicable support mechanism for the multiplicity of renewable technologies, moving from specific to general.⁹⁶²

In 2013 France's President Holland said there should be '*co-ordination, co-operation and harmonisation from renewable energy, with European rules and a European framework*'.⁹⁶³ The German Chancellor, Angela Merkel, indicated that harmonisation should occur '*at a later stage*',⁹⁶⁴ after closure of German nuclear capacity and its replacement with renewables,⁹⁶⁵ overcoming the increased coal generation this has caused.⁹⁶⁶

EU member states are reluctant to have a common energy policy due to perceived loss of control issues, hence the use of the Directive structure requiring individual country by country implementation.⁹⁶⁷

Thus, based on these considerations harmonisation of the EU's renewable energy regime seems unlikely in the near future.⁹⁶⁸ Therefore, this thesis recommends the use of the EU-ETS to simplify and harmonise the renewable electricity framework.

2.13 Conclusions & Key Lessons

As can be seen, the renewables regulatory framework is a multiplicity of Treaty provisions, Directives, Regulations, EU policy documents and member state implementation of the same. In addition to the legal instruments forming the regulatory framework, the CJEU has been required to provide judicial interpretation of the framework.

This multi-layered and multi-jurisdictional structure creates a difficult to understand complex regulatory framework. The framework evolves rapidly compared to the investment lifecycles of renewable electricity generating facilities. For example, the EU-ETS has been through four phases of development, with free allowances from phase 1 effectively collapsing the market price, an issue the market

⁹⁶² Reinhard Haas, Wolfgang Eichhammer, Claus Huber, Ole Langniss, Arturo Lorenzonid, Reinhard Madlenere, Phillipe Menanteau, P Morthorst, A Martinsh, A Oniszki, Joachim Schleich, Adrian Smith, Z Vassk and A Verbruggen, 'How to Promote Renewable Energy Systems Successfully and Effectively' (2004) 32 Energy Policy 833, 838

⁹⁶³ EurActiv.com, "Hollande calls for EU 'harmonization' on renewable energy", <http://www.euractiv.com/energy/hollande-calls-eu-harmonization-news-519965>

⁹⁶⁴ Ibid

⁹⁶⁵ M Karnitschnig, 'Germany's Expensive Gamble on Renewable Energy' The Wall Street Journal, 26 August 2014 <http://online.wsj.com/articles/germanys-expensive-gamble-on-renewable-energy-1409106602> (accesses 1 September 2016)

⁹⁶⁶ Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) Legal Aspects of EU Energy Regulation (Oxford University Press, 2016), 14

⁹⁶⁷ Sanam Haghighi, *Energy Security: The External Relations of the European Union with Major Oil and Gas Supplying Countries* (Hart, 2007), 46-53, 56-62

⁹⁶⁸ Angus Johnson and Guy Block, *EU Energy Law* (Oxford University Press, 2012) 4-6

still endures today. The Renewable Energy Directive itself has had two incarnations, 2001 and 2009. The post 2020 version of the Renewable Energy Directive, in a paradigm shift, proposes not to have nationally binding targets, with capacity targets only existing at EU level. Whilst the renewables regulatory framework has delivered carbon emission reduction, the legislation is said to have significantly increased the systematic risk exposure of the utility sector.⁹⁶⁹

Whilst in any legal framework a level of judicial interpretation is to be expected, as well as the need for judicial processes to resolve drafting conflicts within the legal instruments (courts resolve conflicts *a posteriori*), what has been outlined is a regulatory structure not only in internal conflict, but in conflict with EU free trade principles. As has been shown in seeking to resolve the conflicts between the various parts of the regulatory framework the CJEU has used a *lex specialis* protocol (An analysis of the case law is set out in Chapter 3). It can be seen that the C&C and shared competence⁹⁷⁰ structure of the Renewable Energy Directive⁹⁷¹ is in diagonal conflict with four provisions of EU free trade law (free movement, distortion to competition by enhancing the sales price of renewables and thus favouring certain undertakings e.g. owners of renewable facilities, distorting competition by manipulating market access and other elements of state aid), whereas the other Directives are only in conflict with two or less areas of Treaty based law. In seeking to find an explanation for the number of diagonal conflicts between the Treaty and the Renewable Energy Directive the following suggestions are made

- The desire for unanimity of voting in Council induced in the drafting a need to be 'all things to all people'
- The reluctance of member states to relinquish control over the structure of their electricity markets brought about a highly nationally focussed series of support schemes and hence the conflict with free movement

⁹⁶⁹ Daniel Tulloch, Ivan Diaz-Rainey and I Premachandra, 'The impact of regulatory change on EU energy utility returns: the three liberalization packages' (2018) 50(9) Applied Economics

⁹⁷⁰ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

⁹⁷¹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

- The lack of a regulatory institution with applicable powers at the EU level over Directives crafted on a shared competency basis was always going to end up with national regulators discussing the regulatory framework with its national industry players, simply reinforcing a national model, engendering free movement issues
- Almost any support scheme⁹⁷² which was part of a C&C framework would end up fixing prices above the market norm to allow new technology to be built. The need to create capacity sufficient to allow 20% renewables at a time when the technology was still in its infancy and not at a competitive price point always had the potential for price fixing and state aid issue to develop.

Looking at the Emissions Trading Directive⁹⁷³ (established in accordance with Article 191(1) TFEU), as one of the other pillars of the renewables regulatory framework, the Directive does not induce free movement issues as it is an EU wide market, also as a traded market the very nature of the operational process allows the fair market price to be determined without distortion to competition as would be prohibited in accordance with state aid (Article 107(1) TFEU). The areas where the EU-ETS is in diagonal conflict relates to distortion of competition (Article 107(1) TFEU) due to the favouring of certain undertakings resulting from the over allocation and free allocation of emissions allowances. The Directive is considered in vertical conflict with the 'polluter pays' principle contained in Article 191(2) TFEU as by its nature it allows emissions.

Also, certain Directives have a 'cannibalistic'⁹⁷⁴ effect on other Directives, therefore the Directives can be seen to be in horizontal conflict. For example, the Energy Efficiency Directive reduces electricity demand, which reduces the carbon allowances needed, depressing the price on the EU-ETS further. The prices therefore resulting on the EU-ETS are too low to act as a driver for investment in carbon emissions reducing technology.

⁹⁷² 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

⁹⁷³ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

⁹⁷⁴ Bianka Shoani-Tehrani and Pascal da Costa 'The Paradoxes of the European Energy Market Regulation: A Historical & Structural Analysis of the Electricity Mix' in Pascal da Costa and Danielle Attias (eds) *Towards Sustainable Economy: Paradoxes & Trends in Energy & Transportation* (Springer, 2018)

This position should be seen in the light of Article 7 TFEU which seeks to ensure consistency by stating:

The Union shall ensure consistency between its policies and activities, taking all of its objectives into account and in accordance with the principle of conferral of powers.

An economic assessment of EU climate change policy show that the multiplicity of instruments ‘generate substantial excess cost’.⁹⁷⁵ Therefore redesigning the policy on economic grounds will improve the coherence and overall cost-effectiveness of the policy initiatives.⁹⁷⁶ This could mean that C&C regulation is phased out and market based regulatory solutions (e.g. Emissions Trading Scheme) are given a greater emphasis. Such an emphasis would bring about the EU’s desire of ‘shared responsibility between various actors: government, industry and the public’.⁹⁷⁷ The approach should include specific targets within the market based measures.⁹⁷⁸ It being known that properly designed market based regulatory frameworks allow their implementation at the lowest overall cost, by providing incentives for the greatest reductions in pollution by those firms that can achieve these reductions most cheaply.⁹⁷⁹

Despite the above, the current regulatory framework has facilitated (i) a considerable reduction in carbon emissions via the EU-ETS and other policies, (ii) a reduction in overall energy demand and (iii) the construction of nearly 20% of the EU’s electricity generating capacity from renewables. Therefore, in achieving the ‘20-20-20 by 2020’⁹⁸⁰ goals (Section 1.2), the regulatory framework is a success. However, the regulatory framework has only partially resolved to the electricity ‘trilemma’.⁹⁸¹ The framework has reduced carbon emissions and increased security of supply / reliability; however, the framework has only achieved this at the expense

⁹⁷⁵ Christoph Böhringer, Andreas Keller, Markus Bortolamedi and Anelise Rahmeier Seyffarth, ‘Good things do not always come in threes: On the excess cost of overlapping regulation in EU climate policy’ (2016) 94 Energy Policy, 502

⁹⁷⁶ Ibid

⁹⁷⁷ EU Comm ‘Fifth European Community Environment Programme: Towards Sustainability’ available at <<http://europa.eu/scadplus/leg/en/lvb/128062.htm>>

⁹⁷⁸ EU Comm ‘Sixth Environment Action Programme, Environment 2010: Our future, Our Choice’, available at <<http://europa.eu.int/comm/environment/newprg>>

⁹⁷⁹ Robert Stavins ‘Experience with Market-Based Environmental Policy Instruments’ in Karl-Göran Mäler and Jeffrey Vincent (eds) *Handbook of Environmental Economics* (Elsevier Science, 2003), 359; see also Patricia Birnie, Alan Boyle, and Catherine Redgwell, *International Law and the Environment* (3rd Ed, Oxford University Press, 2009); David Driesen, ‘Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Change Convention’ (1998) 26(1) Boston College Environmental Affairs Law Review

⁹⁸⁰ Eurostat ‘Europe 2020 indicators - climate change and energy’ (2016), available at http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_climate_change_and_energy accessed 10 January 2016

⁹⁸¹ Trilemma of reliability, sustainability and affordability – See David Newbury ‘Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma’ [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

of the electricity consumer via the levies to fund the various national renewables support schemes.

From a diagonal conflict point of view all that has happened is that nationally focused renewables support schemes have been prioritised irrespective of economic justification or the provisions of the EU's free trade principles. The case law analysis set out in Chapter 3 shows that several member states have sought to insulate their energy intensive industries from these levies. These practices being a precursor to the failure of the political will to keep on supporting renewables. Thus, the acceptability of the *lex specialis* approach could terminate as the political will terminates.

Therefore, in terms of the legal conflicts considered in Chapter 3 via case law analysis, this is undertaken using two Directives (i) the Renewable Energy Directive⁹⁸² and (ii) the Emissions Trading Directive.⁹⁸³ These directives are chosen due to their differing competence structure. The clear conflicts between these Directives and the Treaty, are free movement, price fixing, state aid and 'polluter pays'.

⁹⁸² Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁹⁸³ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

Chapter 3 – Conflicts between the Renewable Electricity Regulatory Framework & EU Free Trade Principles

3.1 Introduction

The EU renewables regulatory framework is a complex polycentric⁹⁸⁴ series of Treaty Articles, Directives, Regulations and member state provisions which are in diagonal conflict with EU free trade principles on free movement of goods, undistorted competition state aid, fiscal advantage state aid and in vertical conflict with the 'polluter pays' principle. The research shows that the conflicts highlighted are an example of the phenomenon of legal fragmentation⁹⁸⁵ in practice.

This Chapter provides an analysis, via case law, of the conflicts and apparent prioritisation of environmental protection over the EU's free trade principles.

In undertaking this analysis focus is given to two of the Directives highlighted in Chapter 2 – the Renewable Energy Directive⁹⁸⁶ and the Emissions Trading Directive.⁹⁸⁷

The Renewable Energy Directive is chosen as it is the core of the EU renewables regulatory framework, was shown in Chapter 2 to have the highest number of conflicts with EU free trade principles, is a C&C style shared competence Directive derived from Article 194 TFEU.

The Emissions Trading Directive is chosen as it likewise is a key Directive within the regulatory framework. However, it is a market style Directive, is within the competence of the Commission and lastly it is derived from Article 191 TFEU.

In considering each Directive's conflicts with EU free trade principles the views of the CJEU will be analysed as set out in the table below

⁹⁸⁴ Giuseppe Bellantuono 'Renewables, Investments, and State Aids: Exploring the Legal Side of Polycentricity' [2017] Institute of European Law Birmingham Law School Working Paper 04/2017

⁹⁸⁵ 'The fragmentation of public international law is a long-observed phenomenon that demonstrates uneven normative and institutional development and evolution in inter-state relations. Separate legal norms and institutions have developed largely independently from one another, often instigated by non-identical groupings of states and in response to specific functional issues.' From Margrate Young, 'Fragmentation' Oxford Bibliographies available at <http://www.oxfordbibliographies.com/view/document/obo-9780199796953/obo-9780199796953-0113.xml> accessed 12 March 2019

⁹⁸⁶ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁹⁸⁷ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

Directive	Conflict	Case
Renewable Energy Directive⁹⁸⁸	Free Movement – cross-border trading	<i>Essent 1⁹⁸⁹</i> <i>Ålands Vindkraft⁹⁹⁰</i> <i>Green Network⁹⁹¹</i>
	Free Movement – public procurement purchase criteria	Stadtwerke ⁹⁹² system in Germany
	Free Movement - Energy Taxation a measure of equivalent effect	<i>Outokumpu Oy⁹⁹³</i>
	State Aid - Price Fixing – distorting competition	<i>PreussenElektra⁹⁹⁴</i> <i>Essent 1⁹⁹⁵ (thin markets)</i>
	State Aid, Legitimate expectation and the right to regulate	<i>Charanne⁹⁹⁶</i> <i>Scat Punti Vendita⁹⁹⁷</i>
	State Aid – state resources & exempting consumers from costs	<i>PreussenElektra⁹⁹⁸</i> <i>Vent De Colère⁹⁹⁹</i>

⁹⁸⁸ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

⁹⁸⁹ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

⁹⁹⁰ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

⁹⁹¹ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

⁹⁹² Stadtwerke are communal companies, owned by a city or region, which offers public services for to the city and/or the region. For example Stadtwerke München (Munich City Utilities) or SWM is a German communal company, owned by the city of Munich, which offers public services for the city and the region of Munich. The company supplies electricity for more than 95% of Munich's 750.000 households as well as natural gas, drinking water and, through its stake in the M-net Telekommunikations, telecommunications services. SWM is Europe's largest municipal utility company and ranks among Germany's principal energy providers. Expanding use of renewable energy has been a central element in the company's strategy since 2008. – Sophie Vorrath, 'Will Munich be the world's first 'megacity' to reach 100% renewables?' [2014] Renewable Economy available from <https://reneweconomy.com.au/will-munich-be-worlds-first-megacity-to-reach-100-renewables-28292/> ; See Also the undertaking's web site <https://www.swm.de/english.html>

⁹⁹³ Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155

⁹⁹⁴ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein ECLI:EU:C:2001:160

⁹⁹⁵ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

⁹⁹⁶ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf

⁹⁹⁷ Decision 10/2015, *Scat Punti Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

⁹⁹⁸ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein ECLI:EU:C:2001:160

⁹⁹⁹ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

		<i>Austrian Green Levy</i> ¹⁰⁰⁰ <i>German Green Levy</i> ¹⁰⁰¹
	State Aid Embedded Benefits – exemption from legitimate costs	<i>Essent 2</i> ¹⁰⁰²
Emissions Trading Directive ¹⁰⁰³	Competency and national allocation plans	<i>Commission v Estonia</i> ¹⁰⁰⁴ <i>Poland v Commission (2013)</i> ¹⁰⁰⁵
	State Aid Over allocation	<i>Borealis Polyolefine</i> ¹⁰⁰⁶
	State Aid Hardship – exempting undertakings from payments to which they would normally be liable	<i>DK Recycling</i> ¹⁰⁰⁷
	State Aid - Polluter Pays	<i>GEMO</i> ¹⁰⁰⁸ <i>Futura Immobiliare</i> ¹⁰⁰⁹ <i>Raffinerie Mediterranee</i> ¹⁰¹⁰ <i>Paul van de Walle</i> ¹⁰¹¹ <i>Amia</i> ¹⁰¹² <i>Mesquer</i> ¹⁰¹³ <i>Standley</i> ¹⁰¹⁴

¹⁰⁰⁰ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁰⁰¹ Commission Decision 2015/1585, Aid Scheme SA 33995 –“ implemented by Germany for the support of renewable electricity and of energy-intensive users”, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁰⁰² Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

¹⁰⁰³ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁰⁰⁴ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

¹⁰⁰⁵ Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

¹⁰⁰⁶ Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311

¹⁰⁰⁷ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

¹⁰⁰⁸ Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622

¹⁰⁰⁹ Case C-254/08 *Futura Immobiliare srl Hotel Futura v Comune di Casoria* ECLI:EU:C:2009:479

¹⁰¹⁰ Case C-378/08 *Raffinerie Mediterranee (ERG) SpA, Polimeri Europa SpA and Syndial SpA v Ministero dello Sviluppo economico* ECLI:EU:C:2010:126

¹⁰¹¹ Case C-1/03 *Ministère public v Paul van de Walle* ECLI:EU:C:2004:67

¹⁰¹² Case C-97/11 *Amia SpA, in liquidation v Provincia Regionale di Palermo* ECLI:EU:C:2012:306

¹⁰¹³ Case C-188/07 *Commune de Mesquer v Total France SA and Total International Ltd* ECLI:EU:C:2008:359

¹⁰¹⁴ Case C-293/97 *R v Secretary of State for the Environment and Ministry of Agriculture, Fisheries and Food, exp Standley and Metson* ECLI:EU:C:1999:215

The chapter will initially set out that electricity is ‘goods’ before moving to the main conflicts analysis.

3.2 Introduction to Conflicts with Free Movement of Goods - Electricity is Goods

The generation of electricity is essentially an activity very different from the supply of electricity to consumers. Due to modern life’s reliance on the availability of electricity these activities can be considered ‘Services of General Economic Interest’ and fall within the provisions of Article 106 (2) TFEU. Article 106 TFEU stipulates that such services are subject to the other provisions in the Treaties, particularly the rules on competition, if these rules do not prevent the operation of the service. However, in relation to the analysis undertaken in this research it is not the provision of the service that is important, but the status of electricity as a product and therefore can it be considered ‘goods’ despite its intangible nature, even in physics where it could be considered a flow of the fundamental particles called electrons or in fact simply a standing node in a Schrödinger wave equation.¹⁰¹⁵

Prior to setting out the nature of electricity, a brief review of the principles of free movement of goods will be undertaken.

The CJEU held *Commission v Italy*¹⁰¹⁶ that ‘free movement of goods, constitutes a fundamental rule which, without prejudice to the other provisions of the Treaty, does not permit any exceptions’. Also, in *Commission v France* it was stated that ‘free movement of goods is one of the fundamental principles of the Treaty’.¹⁰¹⁷ Therefore, confirming if these provisions apply to electricity is an important legal issue. The scope of the term ‘goods’ was explained in the *Italian Art Treasures*¹⁰¹⁸ case as items ‘valued in money and which are capable, as such of forming the subject of commercial transactions’ even if those transactions ascribe a negative value to the items in question (*Walloon Waste*).¹⁰¹⁹

Interestingly, it has been argued that the transaction or exchange of goods does not have to be part of an economic activity.¹⁰²⁰ The cross-border requirement

¹⁰¹⁵ Erwin Schrödinger, ‘An Undulatory Theory of the Mechanics of Atoms and Molecules’ (1926) 28(6) *Physical Review* 1049

¹⁰¹⁶ Case 24/68 *Commission v Italy* ECLI:EU:C:1969:29

¹⁰¹⁷ Case C-265/95 *Commission v France* (Spanish Strawberries) ECLI:EU:C:1997:595, para 24

¹⁰¹⁸ Case C-7/68 *Commission v Italy* (Re Art treasures 1) ECLI:EU:C:1968:51

¹⁰¹⁹ Case C-2/90 *Commission v Belgium* ECLI:EU:C:1992:310

¹⁰²⁰ Okeoghene Odudu, ‘Economic activity has a limit to Community law’ in Catherine Barnard & Okeoghene Odudu (eds), *The Outer Limits of European Union Law* (Hart Publishing, 2009), 225, 238; See Also Vassilis

can be satisfied even when the goods are merely transiting the territory,¹⁰²¹ which is important for electricity in relation to free movement considerations, when it is being transmitted through a country or region.

In considering who is an addressee of the Treaty, the definition of member state has been expanded to include local government,¹⁰²² as well as other arms of government in whatever capacity they are acting,¹⁰²³ which is significant where electricity is purchased by municipalities or other government organisations and then sold on to end users. The largest example of such a practice is via the Stadtwerke¹⁰²⁴ system in Germany where many cities purchase electricity for users within their franchise area.¹⁰²⁵

Utility companies (public or private) have been held to be emanations of the state¹⁰²⁶ due to their finance or regulation via legislative means and are therefore considered to be under the same duties and obligations as would be applicable to a member state in EU law.

The status of electricity was settled in the case *Gemeente Almelo v NV Energiebedrijf Ijsselmij*.¹⁰²⁷ The Court noted that it was accepted in EU law, and indeed in the national laws of the member states, that electricity constitutes a 'good' within the meaning of Article 30 TFEU.

Additionally, the *Commission v Netherlands*¹⁰²⁸ confirmed the status of electricity to be 'goods' for the purposes of Articles 34 to 36.

With the status of electricity being held to be 'goods', the provisions of free movement can be seen to apply.

Hatzopoulos, 'The concept of 'economic activity' in the EU Treaty: From ideological dead-ends to workable judicial concepts' (2012) European Business Law Review

¹⁰²¹ Case C-320/03, *Commission v Austria* ECLI:EU:C:2005:684, para 65

¹⁰²² Joined cases C-176/90, *Aragonesa de Publicidad Exterior SA v Departamento de Sanidad y Seguridad Social de la Generalitat de Catalunya* ECLI:EU:C:1991:327, para 8 & Case C-45/87 *Commission v Ireland* (Dundalk Water) ECLI:EU:C:1988:435

¹⁰²³ Case C-5/94 *R v Ministry of Agriculture Fisheries & Food, exp Hedley Lomas (Ireland) Ltd* ECLI:EU:C:1996:205

¹⁰²⁴ A Stadtwerke is a German communal company, owned by a city or regional government, which offers public services for the city and the region

¹⁰²⁵ <https://www.cleanenergywire.org/factsheets/small-powerful-germanys-municipal-utilities> accessed 24 April 2018: As Stadtwerke are public bodies their electricity procurement is undertaken in accordance with the Public Procurement Directive (Directive 2014/24/EU of 26 February 2014 on public procurement) which allows within Article 43 for Eco-Certificates to be required on the electricity purchased, also environmental criteria can be set out in the technical specification of the tender in accordance with Articles 62 and 67(3)

¹⁰²⁶ Means 'a body, whatever its legal form, which has been made responsible, pursuant to a measure adopted by the state, for providing a public service under the control of the state and has for that purpose special powers beyond that which result from the normal rules applicable in relations between individuals.' Case C-188/89 *Foster v British Gas plc* ECLI:EU:C:1990:313; See Also Case 6/64, *Flaminio Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66, In 1964 the European Court of Justice, ruling on the case indirectly suggested that electricity could fall within the scope of Article 37 of the EEC Treaty, but it did not determine any change for the national electricity monopolies

¹⁰²⁷ Case C393/92, *Gemeente Almelo v NV Energiebedrijf Ijsselmij* ECLI:EU:C:1994:171, para 28

¹⁰²⁸ Case 157/94 *Commission v Netherlands* ECLI:EU:C:1997:499

The principles and obligations related to the customs union and free movement of goods set out in Articles 28 to 36 TFEU are therefore mutually supportive.¹⁰²⁹

The restrictions contained in Articles 34 and 35 TFEU (measures having equivalent effect on imports and exports respectively) not only prohibit quantitative restrictions, but also measures having an equivalent effect (See *Italian Trailers*).¹⁰³⁰ Articles 34 and 35 TFEU have been held in *Fra.bo*¹⁰³¹ to be directly effective (such that should a member state breach the provisions, a compensation claim may arise).

The general test was set out in the text book *Dassonville*¹⁰³² judgement as a two-stage set of criteria being (i) trading rules enacted by a member state (also extended to EU institutions),¹⁰³³ and (ii) rules capable of hindering intra-community trade, directly or indirectly, actually or potentially. The *Dassonville* formula was extended to Article 35 (exports) by the Court in the *Bouhelier*¹⁰³⁴ case.

The CJEU also held in the *Cassis de Dijon*¹⁰³⁵ that a product lawfully marketable in one-member state should be freely marketable in another member state - the market access test. The judgement in *Keck*¹⁰³⁶ confirmed and continued the *Cassis de Dijon* criteria. However, the Court said that national provisions restricting or prohibiting certain selling arrangements do not fall within the *Dassonville* formula, and so unlike quantitative restrictions, distinctly applicable measures of equivalent effect and product requirements do not breach Article 34 TFEU, provided they apply to all traders and the provisions are non-discriminatory – same burden in law and in fact.

In relation to the consideration of the issues raised by *Keck*, AG Jacobs emphasised in *Leclerc-Siplec*¹⁰³⁷ that there should be ‘*unfettered access to the whole Community market*’, suggesting *Keck* did not satisfy the ‘underlying principle’¹⁰³⁸ of free movement of goods, deeming this to be the market access test set out in *Cassis de Dijon* and also suggesting that the appropriate test is whether

¹⁰²⁹ Nicolas Bernard ‘Discrimination and Free Movement in EC Law’ (1996) 45(1) International & Comparative Law Quarterly, 82, 83

¹⁰³⁰ Case C-110/05 *Commission v Italy* ECLI:EU:C:2009:66, para 37

¹⁰³¹ Case C-171-11, *Fra.bo SpA v Deutsche Vereinigung des Gas- und Wasserfaches eV (DVGW) — Technisch-Wissenschaftlicher Verein*, ECLI:EU:C:2012:453

¹⁰³² Case C-8/74 *Procureur du Roi v Benoît and Gustave Dassonville* ECLI:EU:C:1974:837

¹⁰³³ Case C-15/83 *Denkavit Nederland v Hoofdproduktschap voor Akkerbouwprodukten* ECLI:EU:C:1984:183, para 15

¹⁰³⁴ Case C-53/76 *Procureur de la Republique de Vesancon v Les Sieurs Bouhelier* ECLI:EU:C:1977:17 ; Case C-68/76 *Commission v France* ECLI:EU:C:1977:48, paras 15-16

¹⁰³⁵ Case 120/78, *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein (Cassis de Dijon)* ECLI:EU:C:1979:42

¹⁰³⁶ Cases C-267/91 & C-268/91, *Keck & Mithouard* CCLI:EU:C:1993:905

¹⁰³⁷ Case C-412/93, *Société d’Importation Edouard Leclerc-Siplec v TFI Publicité & M6 Publicité* ECLI:EU:C:1995:26, para 41 ; AG Maduro also questioned the reasoning in *Keck* - Case C-158-159/04 *Alfa Vita Vassilopoulos* ECLI:EU:C:2006:212

¹⁰³⁸ *Ibid*, para 41

there is a 'material restriction' to market access, thereby introducing a 'de-minimis test'.¹⁰³⁹ AG Jacobs further suggested that it is possible that 'certain selling arrangements' may hinder market access and therefore prevent the development of the internal market.¹⁰⁴⁰ In disagreeing with the reasoning in *Keck*, the AG stated: '*If an obstacle to inter-State trade exists, it cannot cease to exist simply because an identical obstacle affects domestic trade*'.¹⁰⁴¹

Therefore, the AG submitted that arrangements which cause a 'substantial hindrance' to market access should also come within the scope of Article 34, meaning that insignificant measures may not be prohibited.¹⁰⁴² This formulation introduces an economic element to the test relating to free movement, not merely a prohibition or discrimination.¹⁰⁴³ The CJEU confirmed the market access tests in *Åklagaren v Mickelsson and Roos*.¹⁰⁴⁴

In the cases *Commission v Poland*¹⁰⁴⁵ and *Commission v Lithuania*,¹⁰⁴⁶ the CJEU held the framework put in place to be a measure equivalent to a quantitative restriction if its effect was to 'hinder access to the market'.¹⁰⁴⁷ The market access test was also adopted in *Commission v Spain*,¹⁰⁴⁸ with the CJEU referring only to *Commission v Italy*.¹⁰⁴⁹ The Court adopted a wide interpretation in finding any 'obstacle to trade' to be a measure equivalent to a quantitative restriction; regardless of whether or not the objective of the framework put in place was to treat less favourably foreign compared to domestic goods.¹⁰⁵⁰ In light of these recent cases¹⁰⁵¹ it appears that the *Keck* jurisprudence has been superseded.¹⁰⁵²

¹⁰³⁹ Ibid, para 42

¹⁰⁴⁰ S Weatherill, *Cases and Materials on EU Law* (10th Edition, Oxford University Press 2012) 332.

¹⁰⁴¹ Case C-412/93 *Leclerc-Siplec* ECLI:EU:C:1994:393; para 39

¹⁰⁴² Jukka Snell, 'The Notion of Market Access: A Concept or a Slogan?' (2010) 47 *Common Market Law Review* 437, 450

¹⁰⁴³ G Davies, 'Understanding Market Access: Exploring the economic rationality of different conceptions of free movement law' (2010) 11 *German Law Journal* 671, 673.

¹⁰⁴⁴ Case C-142/05, *Åklagaren v Mickelsson and Roos* ECLI:EU:C:2009:336

¹⁰⁴⁵ Case C-639/11 *Commission v Poland* ECLI:EU:C:2014:173

¹⁰⁴⁶ Case C-61/12 *Commission v Lithuania* ECLI:EU:C:2014:172

¹⁰⁴⁷ Case C-629/11 *Commission v Poland* ECLI:EU:C:2014:173, para 52; Case C-61/12 *Commission v Lithuania* ECLI:EU:C:2014:172, para 57

¹⁰⁴⁸ Case C-428/12 *Commission v Spain* ECLI:EU:C:2014:2018

¹⁰⁴⁹ Case C-110/05 *Commission v Italy* ECLI:EU:C:2009:66

¹⁰⁵⁰ Ionnis Lianos, 'In Memoriam Keck: The reformation of the EU law on the free movement of goods' [2015] *European Law Review* 225, 237

¹⁰⁵¹ Case C-639/11 *Commission v Poland* ECLI:EU:C:2014:173; Case C-16/12 *Commission v Lithuania* ECLI:EU:C:2012:426; Case C-428/12 *Commission v Spain* ECLI:EU:C:2014:218; Additionally - The last time the *Keck* case law was found to be cited by the CJEU as good law dates from 2010: Case C-108/09, *Ker-Optika bt v ÁNTSZ Dél-dunántúli Regionális Intézkete* ECLI:EU:C:2010:725, para 51

¹⁰⁵² Eleanor Spaventa, 'Leaving Keck behind? The free movement of goods after the rulings in the *Commission v Italy* and *Mickelsson and Roos*' (2009) 34 *European Law Review*, 914, 928; See Also Ionnis Lianos, 'In Memoriam Keck: The reformation of the EU law on the free movement of goods' [2015] *European Law Review* 225, 236.

The market access issue in relation to renewable electricity is analysed below in Sections 3.5.1 to 3.5.3 in relation to the *Essent* ¹⁰⁵³ *Ålands Vindkraft* ¹⁰⁵⁴ and *Green Network* ¹⁰⁵⁵ cases.

3.3 Exceptions & Derogations from Free Movement

The EUs free movement of goods provisions create a market place where willing buyers and sellers can trade without the interference of national governments.

However, Article 36 TFEU provides a list of exceptions to the mandatory application of free movement being public morality, ¹⁰⁵⁶ security, ¹⁰⁵⁷ public policy, ¹⁰⁵⁸ protection of human life, animals & plants, ¹⁰⁵⁹ the protection of national treasures possessing artistic, historic or archaeological value, ¹⁰⁶⁰ or the protection of industrial and commercial property. ¹⁰⁶¹

Initially the ECJ held in *Commission v Ireland* ¹⁰⁶² that the Article 36 TFEU list was exhaustive and only capable of being invoked if the national measure in question does not constitute ‘a means of arbitrary discrimination or a disguised restriction on trade between member states’. ¹⁰⁶³

As the list within Article 36 TFEU does not take account of every possible scenario, the Court developed additional exceptions in *Cassis de Dijon* ¹⁰⁶⁴ which could be evoked as necessary – the so called ‘mandatory’ or ‘imperative’ requirements. ¹⁰⁶⁵ Additionally, the Court saw the need to balance the competing interests of traders and national technical requirements for products. The result of *Cassis de Dijon* is to replace dual regulation of a product by exporting and importing

¹⁰⁵³ C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁰⁵⁴ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁰⁵⁵ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

¹⁰⁵⁶ Lorna Woods, *Free Movement of Goods and Services within the European Community* (Ashgate Publishing 2004) 115; see also pornography cases Case 34/79 *R v Henn and Darby* ECLI:EU:C:1979:295 & Case 121/85 *Conegate Ltd v Commissioners of Customs and Excise* ECLI:EU:C:1986:114

¹⁰⁵⁷ Case 72/83 *Campus Oil Ltd v Minister for Industry and Energy* ECLI:EU:C:1984:256

¹⁰⁵⁸ Case 231/83 *Cullet v Centre Leclerc* ECLI:EU:C:1985:29 Case 30/77 *R v Bouchereau* ECLI:EU:C:1977:172; see also Case 7/78 *R v Thompson, Johnson and Woodiwiss* ECLI:EU:C:1978:209; Lorna Woods and Philippa Watson *EU Law* (Oxford University Press 2014) 409; Peter Oliver, *Free Movement of Goods in the European Community* (Hart Publishing 2003) 248

¹⁰⁵⁹ Case 40/82 *Commission v UK* ECLI:EU:C:1984:33; Case 16/74, *Centrafarm BV et Adriaan de Peijper v Winthrop B*, ECLI:EU:C:1974:115; Case C-420/01 *Commission v Italy* ECLI:EU:C:2003:363

¹⁰⁶⁰ Case C-7/68 *Commission v Italy* (Art Treasures) ECLI:EU:C:1968:51

¹⁰⁶¹ Case C-78/70 *Deutsche Grammophon Gesellschaft mbH v Metro-SB-Großmarkt GmbH & Co. KG* ECLI:EU:C:1971:59; See Also Case C-62/79 *S.A. Compagnie Générale pour la Diffusion de la Télévision v Ciné Vog Films* ECLI:EU:C:1980:84; Case C-55/80 *Musik-Vertrieb Membran GmbH v Gesellschaft Für Musikalische Aufführungs und Mechanische Vervielfältigungsrechte (GEMA)* ECLI:EU:C:1981:10

¹⁰⁶² Case 113/80 *Commission v Ireland* ECLI:EU:C:1981:139, para 7

¹⁰⁶³ TFEU Article 36

¹⁰⁶⁴ Case 120/78, *REWE-Zentrale AG v Bundesmonopolverwaltung für Branntwein (Cassis de Dijon)* ECLI:EU:C:1979:42

¹⁰⁶⁵ *Ibid*, para 8

member states with a single regulation,¹⁰⁶⁶ such that under the 'mutual recognition' principle the importing state is required to respect the exporting country's regulations.

The implication with regards to the export and import of electricity is that the importing utility is now in control of the purchase decision based on the configuration of the indigenous generation portfolio to allow the import of electricity.

The Commission was quick to see the implications of 'mutual recognition' and issued a communication which recognised the presumption of equivalence, obviating the need for harmonisation of legislation and therefore launched a 'Package on the internal market of goods' in February 2007.¹⁰⁶⁷ In relation to the electricity market the more important part of the package is Regulation 764/2008¹⁰⁶⁸ which lays down rules relating to the application of national technical rules for products lawfully marketed in other member states. In an interconnected electricity market, the need to make things work drives the need to harmonise technical standards. These technical standards owe more to the laws of physics than statute law. The process of aligning technical standards has been ongoing by utility companies since Nikola Tesla's design for an alternating current electricity system was found to be technically superior to Thomas Edison's direct current system.¹⁰⁶⁹ The alignment and development of technical standards is conducted via a series of standard's institutes which undertake development and alignment practices by bringing together technical experts to consider the details of a particular product or process, publishing the result as a standard.¹⁰⁷⁰

The CJEU has expanded the free movement of goods derogations by adding 'effectiveness of fiscal supervision, the protection of public health, the fairness of commercial transactions and the defence of the consumer' (the *Cassis de Dijon* so called 'rule of reason').¹⁰⁷¹ The Commission has also added – improved working conditions, cultural purposes, road safety, press diversity and crime prevention.¹⁰⁷²

¹⁰⁶⁶ Nick Bernard, 'Flexibility in the European Single Market' in Catherine Barnard and Joanne Scott (eds), *The Law of the Single European Market: Unpacking the Premises* (Hart Publishing, 2002)

¹⁰⁶⁷ Commission Communication (2007) 35 – 'Package on the internal market of goods'

¹⁰⁶⁸ Regulation (EC) No 764/2008 of 9 July 2008 'Laying down procedures relating to the application of certain national technical rules to products lawfully marketed in another member state and repealing Decision No 3052/95/EC OJ L 218/21'

¹⁰⁶⁹ <https://teslaresearch.jimdo.com/war-of-currents/>

¹⁰⁷⁰ Examples of standards institutes being - ISO (International Organization for Standardization) a worldwide federation of national standards bodies, The International Electrotechnical Commission (IEC) is the international standards and conformity assessment body for all fields of electrotechnology..

¹⁰⁷¹ Case C-120/78, *REWE-Zentrale AG v Bundesmonopolverwaltung für Branntweien (Cassis de Dijon)* ECLI:EU:C:1979:42, para

¹⁰⁷² Santiago Barón-Escámez, Sylvia Ferretti, Juliana Frendo, Octavien Ginalschi, Maciej Górka, Hans Ingels, Christos Kyriatzis, Florian Schmidt, Carolina Stege, Laura Stočkutė and Yiannos Tolia 'Free movement of goods: Guide to the application of Treaty provisions governing the free movement of goods' EU DirectorateGeneral for Enterprise and Industry 29-30

In February 1985, the CJEU delivered its judgement in *ADBHU*.¹⁰⁷³ The case considered whether a Directive regulating the disposal of waste oils was compatible with the principles of freedom of trade, free movement of goods and freedom of competition established by the Treaty. The CJEU held that the principles of free movement of goods and free competition are not, (emphasis added)

to be viewed in absolute terms but are subject to certain limits justified by the objectives of general interest pursued by the Community provided that the rights in question are not substantively impaired. Environmental protection can be described as one of the Community's essential objectives

This case is significant as it was decided two years before the entry into force of the Single European Act, which brought into the Treaty for the first time an explicit legal basis on which to develop an EU/Community environmental policy (Title VII, headed 'Environment').¹⁰⁷⁴

Following the *ADBHU* case the CJEU went on to hold in *Danish Bottle*¹⁰⁷⁵ that environmental protection could be added to the list of potential exceptions to the application of free movement of goods:

protection of the environment is "one of the Community's essential objectives", which may as such justify certain limitations of the principle of the free movement of goods...

In seeking to apply an explanation and justification of an exemption on environmental grounds the Commission¹⁰⁷⁶ has also stated that a precautionary¹⁰⁷⁷ approach should be taken.

¹⁰⁷³ Case C-240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹⁰⁷⁴ Francis Jacobs, 'The Role of the European Court of Justice in the Protection of the Environment' (2006) 18(2) *Journal of Environmental Law*, 185

¹⁰⁷⁵ Case C-302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹⁰⁷⁶ EU Communication (COM(2000) 1 'on the precautionary principle' – see also Case C-157/96 *R v Ministry of Agriculture Fisheries & Food Exp NFU* ECLI:EU:C:1998:191

¹⁰⁷⁷ The precautionary principle presupposes that potentially dangerous effects deriving from a phenomenon, product or process have been identified, and that scientific evaluation does not allow the risk to be determined with sufficient certainty. The implementation of an approach based on the precautionary principle should start with a scientific evaluation, as complete as possible, and where possible, identifying at each stage the degree of scientific uncertainty – EU Communication (COM(2000) 1 'on the precautionary principle'

The Court has held that in seeking to apply an Article 36 exception (including environmental protection) the justification must be proportionate¹⁰⁷⁸ to the facts at hand (*Walter Rau*¹⁰⁷⁹ and *Campus Oil*¹⁰⁸⁰).

In the case of *Åklagaren v Mickelsson & Roos*¹⁰⁸¹ the Court developed sophisticated reasoning in assessing the proportionality of the measures in question, essentially being that the measures must be adopted in good time and that any restrictions should be made in terms of the application of the most favourable law and the most lenient penalty.

Also, in the case *Nationale Radd van Dierenwerkers en Liefhebbers*,¹⁰⁸² further guidance was given as to (i) choose the least restrictive measure with regards to intra-Community trade, (ii) ensure the measure is accessible and (iii) allow for review. The Court also held in *Commission v Italy*¹⁰⁸³ that to invoke an exception to the free movement of goods, the exception must be appropriate and necessary to obtain the objective. This does not require the member state to ‘*prove, positively, that no other conceivable measure could enable that objective to be attained under the same conditions*’.¹⁰⁸⁴

The reasoning in *ADBHU* and *Danish Bottles* was subsequently used in *Walloon Waste*,¹⁰⁸⁵ *Dusseldorp*¹⁰⁸⁶ and *Aher-Waggon*,¹⁰⁸⁷ before being referenced in renewable electricity specific cases commencing with *Outokumpu Oy*¹⁰⁸⁸ (import tax harmonisation) and progressing to *PreussenElektra*¹⁰⁸⁹ and others outlined in Section 3.5.¹⁰⁹⁰

However, this line of cases seems to have focussed on the combined reasoning of *ADBHU* and *Danish Bottles* and the status of environmental protection, but not considered the potential substantial impairment of rights which was the

¹⁰⁷⁸ Meaning that ‘measures should not exceed the limits of what is appropriate and necessary for attaining the objective pursued, and that where is a choice between several appropriate measures must be had to the least onerous’ Case T-419/03 *Altstoff Recycling Austria v Commission* ECLI:EU:T:2011:102, para 134; Also ‘proportionality’ or ‘being proportionate’ can be considered an ideal or a goal rather than being a principle with the same status as ‘polluter pays’ or the ‘precautionary’ principle. – see Jonathon Verschuuren, ‘Sustainable Development and the Nature of Environmental Legal Principles’ (2006) 9(1) *Potschefstroom Electricity Law Journal*, 17; See Also Jurian Langer and Wolf Sauter ‘The Consistency Requirement in EU Law’ (2017) 39 *Journal of European Law*

¹⁰⁷⁹ Case C-261/81 *Walter Rau Lebensmittelwerke v De Smedt* ECLI:EU:C:1982:382 para 12

¹⁰⁸⁰ Case C-72/83, *Campus Oil Limited v Minister for Industry and Energy*, ECLI:EU:C:1984:256

¹⁰⁸¹ Case C-142/05 *Åklagaren v Mickelsson & Roos* ECLI:EU:C:2009:336 para 39

¹⁰⁸² Case C-219/07 *Nationale Radd van Dierenwerkers en Liefhebber v Belgische Staat* ECLI:EU:C:2008:353, para 41

¹⁰⁸³ Case 110/05, *Commission v Italy* ECLI:EU:C:2009:66, para 62

¹⁰⁸⁴ *Ibid*, para 66

¹⁰⁸⁵ Case C-2/90 *Commission v Belgium* ECLI:EU:C:1992:310

¹⁰⁸⁶ Case C-203/96 *Chemische Afvalstoffen Dusseldorp BV and Others v Minister van Volkshuisvesting,*

Ruimtelijke Ordening en Milieubeheer ECLI:EU:C:1998:316

¹⁰⁸⁷ Case C-389/96 *Aher-Waggon GmbH v Germany* ECLI:EU:C:1998:357

¹⁰⁸⁸ Case C-213/96 *Outokumpu Oy*, ECLI:EU:C:1998:155

¹⁰⁸⁹ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹⁰⁹⁰ David Edward, ‘Judging Environmental Law’ in Gil Carlos and Rodríguez Iglesias (eds) *Une communauté de droit* (BWV Berliner Wissenschafts, 2003) 487,491

limiting condition in *ADBHU*. A justification for the CJEU's failure to consider the potential substantial impairment of rights can be found in *R v MAFF, ex parte Fedesa*¹⁰⁹¹ where it was held that the importance of the objectives pursued may justify restrictions which have adverse consequences, and even substantial adverse consequences, for certain traders. However, the impairment of the free movement right in many of the environmental/renewable electricity cases (*Essent 1*¹⁰⁹² *Ålands Vindkraft*¹⁰⁹³ *Green Network*¹⁰⁹⁴) seems to go beyond substantial impairment to complete impairment and as such it is argued that the judgements fall outside what was intended in *ADBHU*, creating a conflict between the renewable energy regulatory framework and free movement of goods that is total.

It is the line of judicial justification outlined in *ADBHU* and *Danish Bottles* that has led to the cases outlined in the analysis of the conflicts between the EU's free trade principles and the provisions of the Renewable Energy Directive¹⁰⁹⁵ and the Emissions Trading Directive¹⁰⁹⁶ outlined in Sections 3.5 and 3.6 below.

3.4 State Aid Policy and its Conflict with Renewable Energy

The prohibition of state aid is set out in Article 107 TFEU. The CJEU has clarified state aid to be an advantage of any nature (cash or kind) conferred on a selective basis to the recipient¹⁰⁹⁷ by a member state¹⁰⁹⁸ or through State resources¹⁰⁹⁹ which distorts, or threatens to distort, competition¹¹⁰⁰ and as such is '*incompatible with the*

¹⁰⁹¹ Case C-331/88 *R v Ministry of Agriculture Fisheries & Food, ex parte Fedesa* ECLI:EU:C:1990:391, para 17

¹⁰⁹² C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁰⁹³ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁰⁹⁴ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

¹⁰⁹⁵ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹⁰⁹⁶ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁰⁹⁷ Case C-173/73 *Italy v Commission* ECLI:EU:C:1974:71 ; See Also Defined by the CJEU as 'entities engaged in an economic activity, regardless of their legal status and the way in which they are financed' Joined Cases C-180/98 to C-184/98, *Pavlov v Stichting Pensioenfond Medische Specialisten* ECLI:EU:C:2000:428 para 74; See also Case C-222/04, *Ministero dell'Economia e delle Finanze v Cassa di Risparmio di Firenze SpA, Fondazione Cassa di Risparmio di San Miniato and Cassa di Risparmio di San Miniato SpA* ECLI:EU:C:2006:8, para 107

¹⁰⁹⁸ Case C-39/94 *SFEI v La Poste* ECLI:EU:C:1996:285, para 58

¹⁰⁹⁹ Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfshap Ambachten* ECLI:EU:C:2004:448; Case T-351/02 *Deutsche Bahn v Commission* ECLI:EU:T:2006:104; Case C-173/73 *Italy v Commission* ECLI:EU:C:1974:71; Case 82/77 *Van Tiggele*, ECLI:EU:C:1978:10, paras 25 and 26; Case T-358/94 *Air France v Commission*, ECLI:EU:T:1996:194, para 63; See Also http://ec.europa.eu/competition/state_aid/overview/index_en.html

¹¹⁰⁰ Case C-173/73 *Italy v Commission* ECLI:EU:C:1974:71

internal market'.¹¹⁰¹ State aid may take a series of different forms,¹¹⁰² each manifesting as an advantage.¹¹⁰³

The focus of state aid policy has become increasingly centred on the energy sector as the EU seeks to address the joint issues of security of supply and the reduction in carbon emissions.¹¹⁰⁴ Within the EU, the environment and energy savings sector is the most subsidised with €54.8 bn of aid.¹¹⁰⁵ The EU has suggested that state aid should be targeted at residual energy market failures; that is, failures that remain unaddressed by any other policies and measures.¹¹⁰⁶

The CJEU has stated that '*environmental protection, however legitimate*' cannot justify the lack of assessment of such measures as state aid¹¹⁰⁷ and therefore a state aid assessment is a barrier to distortions of competition brought about within the member state renewable support schemes.¹¹⁰⁸

Support or aid granted by member states may distort competition because it unfairly strengthens the position of companies that benefit from it, compared to their competitors. However, as stated in *Danish Bottles*¹¹⁰⁹ protection of the environment is '*one of the Community's essential objectives*', which, in certain circumstances, may justify the granting of state aid. State aid can provide incentives to reach the EU's targets for a low carbon and energy-efficient economy (the so called '*circular economy*').¹¹¹⁰ The EU has stated that the rules for environmental state aid allow a

¹¹⁰¹ Article 107 (1) TFEU; See Also Case C-487/06 *British Aggregates Association v Commission and UK* ECLI:EU:C:2008:757, para 111; See Also Case C-730/79 *Philip Morris* ECLI:EU:C:1980:209

¹¹⁰² Subsidies and direct payments (a mechanism which is very important in the renewable energy sector due to the wide use of feed-in tariffs and other incentives) - Case C-30/59 *Steenkolenmijnem v High Authority* ECLI:EU:C:1961:2; Exemption from duties and taxes - Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732; Exemption from para-fiscal charges - Cases C-128/03 and C-129/03 *AEM and AEM Torino v Autorità per l'energia elettrica e per il gas* ECLI:EU:C:2005:224, para 38 to 51; Preferential interest rates - Joined Cases C-278/92 to 280/92 *Spain v Commission* ECLI:EU:C:1994:325; Guarantees of loans at favourable rates - Case C-323/82, *Intermills SA v Commission* ECLI:EU:C:1984:345; Making land or buildings available for free or at reduced rates - Case C-239/09 *Seydaland Vereinigte Agrabetriebe v BVVG Bodenverwertungs-undverwaltungs* ECLI:EU:C:2010:778; cancelling property and other debts Case C-150/16 *Fondul Proprietatea SA v Complexul Energetic Oltenia SA* ECLI:EU:C:2017:388

¹¹⁰³ Case C-39/94 *SFEI v La Poste* ECLI:EU:C:1996:285, para 60; Case C-342/ 96 *Spain v Commission*, ECLI:EU:C:1999:210, para 41

¹¹⁰⁴ Nicole Robins and Tridevi Chakma, 'State Aid in Energy under the Spotlight: The implications of the Hinkley Point Decision' (2016) 2 European state aid Quarterly, 247

¹¹⁰⁵ EU Commission's state aid Scoreboard, available at:

http://ec.europa.eu/competition/state_aid/scoreboard/index_en.html, accessed 29 March 2019

¹¹⁰⁶ Commission, Decision 2013/269 of 18 December 2013 'State aid SA34947 (2013/C) (ex 2013/N)-United Kingdom, Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station', OJ L/109/2015, 269; See also Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439

¹¹⁰⁷ Case C-487/06 *British Aggregates Association v Commission and UK* ECLI:EU:C:2008:757 para 92

¹¹⁰⁸ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' - Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹¹⁰⁹ Case 302/86, *Commission v Denmark*, ECLI:EU:C:1988:421, para 8 & 9

¹¹¹⁰ The Circular Economy within the EU is composed of a set of ten key indicators which cover each phase - i.e. production, consumption, waste management and secondary raw materials - as well as economic aspects - investments and jobs - and innovation. EU Communication Com(2018) 29 'on a monitoring framework for the circular economy'

broad range of aid measures for environmental protection, whilst ensuring that any distortions of competition brought about by such measures do not go beyond what is necessary and acceptable.¹¹¹¹ It has been stated that any market intervention by public authorities that may affect competition or the internal market¹¹¹² should be assessed against the state aid principles and the requirements sets out in Articles 107-109 TFEU.¹¹¹³

The 2014 case of *Pearle*,¹¹¹⁴ set out four criteria to define state aid, these being an intervention (i) by the State and through State resources, (ii) liable to affect trade between member states, (iii) conferring an advantage on the recipient and (iv) distort, or threaten to distort, competition. The application of the *Pearle* conditions was refined in *Deutsche Bahn v Commission*,¹¹¹⁵ where the four criteria were declared to be separate and cumulative conditions. The General Court reconfirmed the state aid principles in *Alcoa Trasformazioni*,¹¹¹⁶ as follows: -

- the existence of an advantage is not ruled out by the mere fact that competing undertakings in other member states are in a more favourable position¹¹¹⁷
- that the existence of an advantage must be assessed irrespective of the competitive playing field in other member states¹¹¹⁸
- the very nature of the preferential tariff or payment is enough to conclude that the undertaking concerned was not bearing all the charges which should have normally burdened its budget¹¹¹⁹
- the existence of an advantage results from the simple description of the price differentiation mechanism (a compensation mechanism), the purpose of which is to exonerate a company from the payment of a part of the price of materials necessary for producing goods that are sold within the EU¹¹²⁰

¹¹¹¹ http://ec.europa.eu/competition/sectors/energy/environment_en.html accessed 30 March 2018

¹¹¹² Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹¹¹³ Kaisa Huhta, James Kroeger, Tade Oyewunmi and Piti Eiamchamroonlarp, 'Legal and Policy issues for Capacity Remuneration Mechanisms in the Evolving European Internal Market' (2014) *European Energy & Environmental Law Review*, 76, 87

¹¹¹⁴ Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfschap Ambachten* ECLI:EU:C:2004:448 para 33

¹¹¹⁵ Case T-351/02, *Deutsche Bahn v Commission*, EU:T:2006:104, para 103

¹¹¹⁶ Case T-177/10, *Alcoa Trasformazioni v Commission*, ECLI:EU:T:2014:897

¹¹¹⁷ *Ibid*, para 85

¹¹¹⁸ *Ibid*, para 82 to 85

¹¹¹⁹ *Ibid*, para 82

¹¹²⁰ *Ibid*, para 84

- state aid must be assessed on its own merits and not in the light of its objectives, such as the remediation of imperfect competition on a certain market¹¹²¹

A distortion of competition is assumed to exist as soon as the State grants a financial advantage to an undertaking in a liberalised sector where there is, or could be, competition – such as the renewable electricity sector.¹¹²² This has been assumed because the aid improves the competitive position of the recipient compared to other undertakings with which it competes.¹¹²³

In relation to renewable electricity it has been held in *Essent*¹¹²⁴ that the state aid needs to comply with the provisions of Articles 30 TFEU [Customs Union] and 110 TFEU [Energy Taxation].

Furthermore, the actions of a member state can be considered state aid where the State seeks to approximate, by unilateral measures, the conditions of competition in a particular sector of the economy to those prevailing in other member states, considering the effect of the measures¹¹²⁵ – *Heiser*.¹¹²⁶ The *Heiser* case gives a good example of the kind of measures that a member state could consider legitimate in trying to bring about a market where domestic industry faces the same business environment as foreign competitors. In *Heiser* the State sought to reduce energy costs to intensive energy users to the level faced by their major competitors in the Far East and China (this issue will be considered in detail in Sections 3.5.10 to 3.5.12 using the recent cases of - *Vent De Colère*,¹¹²⁷ *Austrian Green Levy*¹¹²⁸ and *German Green Levy*¹¹²⁹).

The CJEU stated in *British Aggregates*,¹¹³⁰ that state aid is more than a simple subsidy or payment, it includes not only positive benefits, but also State measures which, in various forms, mitigate the charges that are normally included in the budget of an undertaking and which thus, without the benefit being a subsidy,

¹¹²¹ Ibid, para 85

¹¹²² Joined Cases T-298/97, T-312/97, T-313/97, T-315/97, T-600/97 to 607/97, T-1/98, T-3/98 to T-6/98 and T-23/98 *Alzetta v Commission* ECLI:EU:T:2000:151, para 141-147; Case C-280/00 *Altmark Trans GmbH and Regierungspräsidium Magdeburg v Nahverkehrsgesellschaft Altmark GmbH, and Oberbundesanwalt beim Bundesverwaltungsgericht* ECLI:EU:C:2003:415

¹¹²³ Case 730/79 *Phillip Morris Holland BV v Commission* ECLI:EU:C:1980:209, para 11

¹¹²⁴ Case C-206/06 *Essent Netwerk Noord BV v Nederlands Elektriciteit Administratiekantoor BV and Saranne BV* ECLI:EU:C:2008:413, para 40 to 59

¹¹²⁵ Case C-71/09, C-73/09 & C-76/09 *Comitato "Venezia vuole vivere" & Others v Commission*, ECLI:EU:C:2011:386, para 94

¹¹²⁶ Case C-172/03, *Heiser*, ECLI:EU:C:2005:130, para 54

¹¹²⁷ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹¹²⁸ Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060

¹¹²⁹ Case T-47/15 *Germany v Commission*, ECLI:EU:T:2016:281

¹¹³⁰ Case T-210/02 *British Aggregates v Commission* ECLI:EU:T:2012:110 para 46

are similar in character or have a similar effect. Therefore, reducing the tax rate, providing low or zero cost loans, reducing levies or simply paying more for government contracts could all be defined as state aid.

It is important to understand that state aid need not always be granted directly by the State (national, region or local government), but can also be found to exist where aid is provided by public or private bodies designated or established by the State – *Steinike & Weinlig*¹¹³¹ and *Sloman Neptun*.¹¹³² The rules of state aid are not circumvented merely through the creation of autonomous institutions charged with the allocation of aid – *France v Commission*.¹¹³³

It has been held that where an organisation is required to collect funds by statute or order of the State, and where those funds are held separately and are not available for the normal activities of the undertaking prior to those funds being administered as aid to itself or other undertakings for strictly defined purposes and where those purposes are defined by the State, those funds can be characterised as state aid – *Ladbroke Racing v Commission*.¹¹³⁴ This is an issue which was considered in relation to renewable electricity in *PreussenElektra*¹¹³⁵ (See Section 3.5.9).

Specifically, in relation to renewable electricity the Commission has established state aid for renewable energy to be compatible with Articles 107(3)(c) TFEU, and as such has published both the General Block Exemption Regulation (GBER)¹¹³⁶ and the Guidelines on state aid Regarding Environmental Protection and Energy 2014 to 2020 (EEAG)¹¹³⁷ (outlined in Annex 4 and 5).

The Commission has also declared in relation to investment in network infrastructure which provides a general benefit, rather than to a specific set of organisations, such investment is to be regarded as a general measure which does not amount to state aid.¹¹³⁸

¹¹³¹ Case 78/76 *Steinike & Weinlig v Germany* ECLI:EU:C:1977:52, para 21

¹¹³² Case 72/91 & 73/91 *Sloman Neptun* ECLI:EU:C:1993:97, para 19

¹¹³³ Case C-482/99 *France v Commission* ECLI:EU:C:2002:294, para 23

¹¹³⁴ Case T-67/94, *Ladbroke Racing v Commission* ECLI:EU:T:1998:7, para 106 to 108

¹¹³⁵ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹¹³⁶ EU Regulation No 1588/2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, OJ 2015 L 248/1, Article 1 (1), a, iii) environmental protection; and European Commission, Regulation (EU) No 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. ('GBER')

¹¹³⁷ European Commission, Guidelines on State aid for environmental protection and energy 2014-2020, OJ 2014 C 200/1. ('EEAG')

¹¹³⁸ Conor Quigley and Anthony Collins *EC state aid Law and Policy* (2nd Ed Hart, 2009), 48; See also Case C-164/02 *Netherlands v Commission* ECLI:EU:C:2004:54, para 7

3.5 Renewable Energy Directive¹¹³⁹ & Conflicts with EU Free Trade Principles

The main features of the Renewable Energy Directive were outlined in Section 2.10.7. Also set out were the basic conflicts with Treaty provisions that the Renewable Energy Directive has. It should be recalled that the Renewable Energy Directive is C&C in style and falls within a shared competency¹¹⁴⁰ model between the Commission and the member states. The Directive grants member states a wide discretion as to the renewables support scheme¹¹⁴¹ implemented by the member state to meet their target within the overall 20% target for renewables across the EU.¹¹⁴²

This section undertakes a detailed analysis of the conflicts outlined above using case law and seeks to ascertain if it is the Directive's style or the nature of the competency framework which creates conflicts that would not otherwise exist. The analysis commences with free movement of goods, continues with price fixing and concludes with various other aspects of state aid.

3.5.1 Free Movement – Flemish¹¹⁴³ Renewables *Essent 1*¹¹⁴⁴

The *Essent 1* case illustrates the conflict between the national renewables support scheme set up under the Renewables Energy Directive and free movement of goods.

The *Essent 1* case concerned the nature of the Flemish support scheme for renewable electricity, which issued renewable energy certificates to generators of renewable electricity only if they were in the Flemish Region of Belgium, and

¹¹³⁹ EU Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹¹⁴⁰ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹¹⁴¹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹¹⁴² Case C-195/12 *IBV & Cie* ECLI:EU:C:2013:598

¹¹⁴³ For an introduction to the Belgium electricity market see Damien Verhoeven and Guillaume Possoz, 'Belgium' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

¹¹⁴⁴ C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

subsequently obliged electricity distributors to surrender a minimum amount of such certificates without being able to offer equivalent certificates obtained in other EU member states as an alternative. Essent, as an electricity utility, was currently also sourcing renewable energy from Norway, Denmark, Sweden and the Netherlands. However, the renewable nature of this imported electricity could not be factored into any calculations on the amount of electricity supplied due to restrictions within the Flemish support scheme.

In *Essent 1*, Advocate General Bot stated the issue to be determined was: whether the Flemish renewables support scheme is compatible with the free movement of goods and with the non-discrimination principle. The then in place Renewable Energy Directive 2001/77/EC regulated the framework for the issue of renewable energy certificates which could be used by a member state to show it was meeting its obligations to produce a minimum amount of electricity from renewable sources and the certificates of origin, which allowed electricity distributors to prove that a required amount of the electricity it was distributing originated from renewable sources.

Electricity suppliers could purchase renewable energy from other member states, but, such electricity was often more expensive, and suppliers would still have to submit the necessary Flemish based 'green' certificates.

The AG noted that the Court in *PreussenElektra*¹¹⁴⁵ allowed the German support scheme via a justification under Article 36 TFEU, despite its potentially discriminatory nature, it also being an implicit reversal of the finding in *Cassis de Dijon*,¹¹⁴⁶ which only allows restrictions to the free movement of goods, where such restrictions do not discriminate between domestic and imported goods.¹¹⁴⁷ It might have been this reversal that led the AG to suggest, finding support in the integration principle,¹¹⁴⁸ that the Court in *Essent 1* should not make that reversal explicit. The AG put forward the following as arguments for rejecting the Flemish scheme: -

¹¹⁴⁵ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹¹⁴⁶ Case 120/78, *REWE-Zentrale AG v Bundesmonopolverwaltung für Branntwein (Cassis de Dijon)* ECLI:EU:C:1979:42

¹¹⁴⁷ G van Calster *International and EC trade law - The environmental challenge* (Cameron May, 2000) 564

¹¹⁴⁸ Principle 13 'In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population' UN General Assembly, United Nations Conference on the Human Environment, 15 December 1972, A/RES/2994, available at: <http://www.refworld.org/docid/3b00f1c840.html> accessed 22 September 2018; See Also André Nollkaemper 'Three Conceptions of the Integration Principle in International Environmental Law' in Andrea Lenschow (ed) *Environmental Policy Integration Greening Sectoral Policies in Europe* (Routledge, 2002)

- The Flemish Region violated a promise made at the time the relevant scheme was approved by the European Commission under state aid rules to develop and operate an effective market for the certificates
- The scheme contained a 'local production' requirement
- Most importantly the scheme was contrary to the finding in *Dassonville* that any trading rules enacted by member states which are capable of hindering, directly or indirectly, actually or potentially, trade within the EU are measures having an effect equivalent to quantitative restrictions and thus prohibited by Article 34 TFEU.¹¹⁴⁹

The Renewable Energy Directive (Directive Article 3(2)) simply requires member states to put in place a renewables support scheme¹¹⁵⁰ to ensure the development of sufficient renewable electricity capacity to reach or exceed the member state's national energy target contained in Directive Article 3(3) (See Section 2.10.7). This fact was used by proponents of support schemes such as the Flemish one, to argue that discriminative support may be required to assist the industry to work towards the development of the renewable sector and that a national or regional support scheme can focus on the needs of renewable generation in a particular country or region.

The CJEU did not rule on the qualification of the certificates of origin as being 'goods' in their own right or not (despite the Court finding that the certificates were traded on a market – '*valued in money and subject of commercial transactions*' criteria to be held as goods (*Italian Art Treasures*)¹¹⁵¹ – finding in a similar manner to *Dassonville*¹¹⁵² that the whisky was the goods and not the certificate of origin),¹¹⁵³ but held that the legislation hinders the free movement of the electricity underlying the certificates.¹¹⁵⁴

The CJEU confirmed the following:

¹¹⁴⁹ Case C-8/74 *Procureur du Roi v Benoît and Gustave Dassonville* ECLI:EU:C:1974:837, para 5

¹¹⁵⁰ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹¹⁵¹ Case C-7/68 *Commission v Italy* (Re Art treasures 1) ECLI:EU:C:1968:51

¹¹⁵² Case C-8/74 *Procureur du Roi v Benoît and Gustave Dassonville* ECLI:EU:C:1974:837

¹¹⁵³ Case C-7/68 *Commission v Italy* (Re Art treasures 1) ECLI:EU:C:1968:51

¹¹⁵⁴ The following cases showing that the CJEU, on numerous occasions has held that Article 34 TFEU prohibits national legislation which, even at the most simple level, requires a licence for the import of goods from another member state. Joined Cases C-51/71 to C-54/71 *International Fruit Company NV v Produktschap voor groenten en fruit* ECLI:EU:C:1971:128, para 9; Case C-124/81 *Commission v UK* (UHT milk) ECLI:EU:C:1983:30, para 9; Case 40/82 *Commission v UK* ECLI:EU:C:1984:33, para 24; Case C-304/88 *Commission v Belgium* ECLI:EU:C:1990:122, para 9; Case C-235/91 *Commission v Ireland* ECLI:EU:C:1992:443, para 5

- The absence of an express reversal of the non-applicability of the 'Rule of Reason' (*Cassis de Dijon*)¹¹⁵⁵ to discriminatory measures
- The applicability of the proportionality test¹¹⁵⁶
- The regime does restrict trade but can, in principle, be justified for environmental reasons (A justification with a simple application of *ADBHU*¹¹⁵⁷ and *Danish Bottle*)¹¹⁵⁸

In *Essent 1*, the final judgement was left to the national court. The CJEU referred back to the national court the criteria with which the assessment was to be made:

- For the Flemish scheme to meet the proportionality test, it is important that mechanisms be established which ensure the creation of a genuine market for certificates in which supply can match demand, reaching some kind of balance, so that it is possible for the relevant suppliers to obtain certificates under fair terms.¹¹⁵⁹
- Furthermore, the fine in the absence of certificate quota fulfilment must not impose excessive penalties on the traders concerned.¹¹⁶⁰

The CJEU found there to be an imbalance between foreign and domestic suppliers. Most of the larger electricity suppliers in the Flemish Region also operate as generators.¹¹⁶¹ This makes the market and its prices subject to the overall corporate strategy of these supplier/generator undertakings. They choose whether their producers' certificates are kept for meeting their own obligation to surrender certificates, being a supplier; or whether these are sold (to competitor suppliers), via the energy exchange, or via the grid operator, who guarantees a legal minimum price for certificates. Such varieties of strategies in managing one's certificates stock are not open to suppliers producing outside of the Flemish Region. Such suppliers can only buy certificates and must do so to a considerable extent from competitors on the supply market. These criteria mean that the market is effectively closed, or severely restricted, for undertakings outside the Flemish region, meaning that renewable generators within the region are protected from competition in contravention of one of the core principles of EU law. The market framework put in

¹¹⁵⁵ Case 120/78, *REWE-Zentrale AG v Bundesmonopolverwaltung für Branntwein (Cassis de Dijon)* ECLI:EU:C:1979:42, para

¹¹⁵⁶ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192, para 103

¹¹⁵⁷ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹¹⁵⁸ Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹¹⁵⁹ *Ibid*, para 112

¹¹⁶⁰ *Ibid*, para 114

¹¹⁶¹ *Ibid*, para 115

place has allowed these generators to have the potential to abuse their dominant position within the region in contravention with Article 102 TFEU.¹¹⁶²

Alongside the observation that previously the Belgian energy regulator had refused the surrender of any non-Flemish certificates in satisfaction of the balancing requirement, it is doubtful that the Flemish regime functions as an open, transparent and effective market which the CJEU also required in *Ålands Vindkraft*.¹¹⁶³

In many ways the mechanism is very similar to a standard feed-in tariff scheme, arguably falling far short of the requirements of the CJEU. However, the support scheme¹¹⁶⁴ was allowed and a restriction to free movement upheld by the Court.¹¹⁶⁵ The case justified a conflict between the free movement of goods and the need to implement a nationally focussed scheme which supports the development of renewable electricity. This and other similar judgements (*PreussenElektra*,¹¹⁶⁶ *Ålands Vindkraft*,¹¹⁶⁷ *Green Network*¹¹⁶⁸ and *Essent 2*¹¹⁶⁹) raised concerns that a series of nationally focussed renewables support schemes could lead to sub-optimal deployment of renewables. Such a topology of support schemes could increase development in some regions that are not necessarily corresponding to those best placed in terms of wind or solar resources, thereby increasing energy costs within the sub-optimal countries and as such leading to higher support payments.¹¹⁷⁰ In the face of these higher support payments member states may be less willing to support optimal schemes in other jurisdictions, leading to further entrenchment of the nationally focussed regulatory structure.

Overall the *Essent 1* case demonstrates a conflict between the Flemish renewables support scheme set up in accordance with the Renewable Energy Directive and the free movement of goods. The finding of the CJEU is a simple direct

¹¹⁶² Renato Nazzini *Foundations of European Competition Law: The Objective & Principles of Article 102* (Oxford University Press, 2011), 108

¹¹⁶³ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹¹⁶⁴ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹¹⁶⁵ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192, para 131

¹¹⁶⁶ Case C-379/98 *PreussenElektra AG v Schleswag AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹¹⁶⁷ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹¹⁶⁸ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

¹¹⁶⁹ Case C-492/14 *Essent Belgium NV v Vlaams Gewest* ECLI:EU:C:2016:732

¹¹⁷⁰ Fabien Roques, 'European Electricity Markets in Crisis: Diagnostic and Way Forward' (2013) Mission du Commissariat Général à la Stratégie et à la Prospective available at http://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/Roques_CGSPreport_12November20131.pdf accessed 27 April 2018

application of the *ADBHU*¹¹⁷¹ and *Danish Bottle*¹¹⁷² derogation from the requirement to enforce free movement of goods and in that respect, is easy to understand, as it is an application of the proportionality rule. In summary the CJEU sought to show that a free movement restriction had occurred, however, the justification of the restriction in terms of support for renewable electricity and emissions reduction was proportionate.

The CJEU has applied a *lex specialis* approach to resolving the conflict between the renewable electricity support scheme and EU free trade principles. The CJEU has therefore dis-applied its interpretative norm which would be to find against any interpretation that would '*lead to a result contrary both to the spirit of the Treaty [...] and to its system*'.¹¹⁷³

The CJEU seems to have turned away from considering the difference between discrimination *de jure* and discrimination *de facto*.¹¹⁷⁴ What the CJEU has in effect done is applied a protectionist ring around, what was at the time an emerging technology, based on the overriding objective¹¹⁷⁵ of carbon emissions reduction, on a lesser of two evils justification, which in an EU context is tested by proportionality. Thus, the CJEU could be following a Dworkin constructive approach to interpretation looking at political or moral concerns, related to climate change.¹¹⁷⁶

It is argued that the C&C nature of the Renewable Energy Directive, in terms of a national renewables installed capacity target, has driven the need to find a national solution. As the 2009 Renewable Energy Directive¹¹⁷⁷ effectively only left 8 years from its effective date in 2012 to the 2020 mandatory target end date, it did not leave enough time for multilateral discussions in relation to a joint development agreement and statistical transfer of renewables capacity, followed by a construction programme. Also, with the 2008 economic crisis still being managed by most EU member states, putting in place a solution that focussed on the local

¹¹⁷¹ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹¹⁷² Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹¹⁷³ Case C-294/83 *Les Verts v Parliament* ECLI:EU:C:1986:166, para 25

¹¹⁷⁴ De facto means a situation true in fact, but that is not legally required or sanctioned. In contrast, de jure means a situation that is in accordance with law.

¹¹⁷⁵ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹¹⁷⁶ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

¹¹⁷⁷ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

market and did not involve cash flows external to the national economy was politically and economically expedient.¹¹⁷⁸

The *Essent 1* case also has implications in relation to the trading of the certificates and ‘thin’¹¹⁷⁹ markets which are discussed on Section 3.5.7 below.

3.5.2 Swedish¹¹⁸⁰ Renewables & Free Movement – *Ålands Vindkraft*¹¹⁸¹

Building from the *Essent 1* case the CJEU sought to determine the related *Ålands Vindkraft* case. The *Ålands Vindkraft* case is one of the most academically discussed¹¹⁸² of the renewable energy cases and relates to the Swedish authority’s refusal to allow access to its national renewables support certificate scheme to a wind farm on an island in Finish sovereign territory in contravention of Article 34 TFEU.¹¹⁸³ The case illustrates the conflict of the national renewables support scheme set up under Articles 3(2) and 3(3) of the Renewables Energy Directive with free movement of goods.

Sweden promotes renewable electricity through a series of different legal incentives, the most important of which is a quota system for renewable electricity produced in Sweden, based on a certificate trading system.¹¹⁸⁴ The *Ålands*

¹¹⁷⁸ David Florysiak and Vidhan Goyal ‘Capital Market Access and Cash Flow Allocation during the Financial Crisis’ [2016] Asian Finance Association (AsianFA) 2016 Conference ; See Also Victoria Ivashina and David Scharfstein ‘Bank lending during the financial crisis of 2008’ (2010) 97(3) Journal of Financial Economics, 319; See Also Manju Puri, Jörg Rocholl and Sascha Steffen ‘Global retail lending in the aftermath of the US financial crisis: Distinguishing between supply and demand effects’ (2011) 100(3) Journal of Financial Economics 556

¹¹⁷⁹ A thin market is a market with a low number of buyers and sellers. Since few transactions take place in a thin market, prices are often more volatile and assets are less liquid. The low number of bids and asks will also typically result in a larger spread between the two quotes. - <https://www.investopedia.com/terms/t/thinmarket.as> accessed 27 April 2018

¹¹⁸⁰ For an introduction to the Swedish electricity market see Hans Andreasson, ‘Sweden’ in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

¹¹⁸¹ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹¹⁸² Marek Szydło, ‘How to reconcile national support for renewable energy with internal market obligations? The task for the EU legislature after *Ålands Vindkraft* and *Essent*’ (2015) 52(2) Common Market Law Review, 489; Anouk van Der Wanssem, ‘Judgment of the European Court of Justice, 1 July 2014: Case C-573/12, *Ålands Vindkraft AB v. Energimyndigheten*’ (2015) 42(4) Legal Issues of Economic Integration, 401; Armin Steinbach and Robert Brückmann, ‘Renewable Energy and the Free Movement of Goods’ (2015) 27(1) Journal of Environmental Law, 1; Eirini Tsifopoulou, ‘Renewable-Energy Support Schemes in the Case Law of the Court of Justice of the EU: Tensions Between Trade and Climate Objectives’ (2016) 6(3-4) Climate Law, 264; Dorte Fouquet and Angela Guarrata, ‘Judgment of 1 st July 2014 in *Ålands Vindkraft AB v Energimyndigheten* Comments on Case C-573/12’ (2014) 1 Renewable Energy Law and Policy Review, 52; Étienne Durand and Malcolm Keay, ‘National support for renewable electricity and the single market in Europe: the *Ålands Vindkraft* case’ [2014] Oxford Institute for Energy Studies; Geert van Calster, ‘Climate change and renewable energy as a super trump for EU trade law’ (2014) 1 Renewable Energy Law and Policy Review; Dorte Fouquet and J Nysten, ‘Guarantees of Origin and Green Electricity Certificates in Flanders and in Sweden national design weaknesses or violation of European rules?’ (2013) 3(3) ,European Energy Journal, 72; Alex McLean, ‘The ECJ / *Ålands* case – Implications for National Renewables Support Systems’ [2014] Energy & Resources; A Sánchez Graells, ‘CJEU protects discriminatory green energy schemes and keeps inconsistency in EU free movement of goods law (C-573/12)’ (2014) <http://howtocrackanut.blogspot.no/2014/07/cjeu-protects-discriminatory-green.html> (accessed 10 May 2016); C Ryckman, ‘EU Court Allows Discriminatory Green Energy Support Schemes’, National Law Review (2014), www.natlawreview.com/article/eu-court-allows-discriminatory-green-energy-support-schemes (accessed 1 April 2016); C Banet, ‘The EU Court Of Justice rules in favour of Sweden in the *Åland Vindkraft* Case’ July 2014, www.ecohz.com/facts-news/news/aaland-case (accessed 1 September 2016)

¹¹⁸³ Laurens Ankersmit, ‘Facilitating’ Infringements of Article 34TFEU and the Territorial Nature of Green Electricity Support schemes: Case C-573/12 *Ålands Vindkraft v Energimyndigheten*’ [2014] European Law

¹¹⁸⁴ Swedish legal Act No. 2011:1200 imposes on electricity suppliers, certain electricity consumers and energy-intensive companies to annually acquire renewable energy certificates in relation to the proportion to their electricity sales and their consumption within a specific time frame (Chapter 4 §§ 1 and 4 Act No. 2011:1200)

Vindkraft case presented the CJEU with a fresh opportunity to rule on the consistency of EU law with national support schemes for energies produced from renewable sources.

The Swedish scheme awarded certificates to renewable generation located in the country. The certificates could be sold to electricity suppliers or to certain users which are obliged to provide proof of the acquisition of a quota of certificates, corresponding to a proportion of the electricity supplied. Should the number of certificates presented be lower than the quota obligation, a balancing fee or cash out price was levied to make up the shortfall.

Ålands Vindkraft is the operator of a wind farm located on an island in the sovereign territory of Finland. The island is, however, connected to the Swedish electricity distribution system, and thus *Ålands Vindkraft* applied to the Swedish authorities to obtain green certificates pursuant to the Swedish scheme. The application was refused by the Swedish energy regulator (Energimyndigheten) because the scheme is open solely to electricity generation installations located in Sweden.

In the annulment proceedings brought by *Ålands Vindkraft* it argued that the Swedish scheme runs counter to the principle of free movement of goods. According to *Ålands Vindkraft*, the effect of the scheme was that approximately 18% of Swedish electricity consumption was reserved for renewable electricity producers located in Sweden, to the detriment of imported electricity.

In formulating his opinion Advocate General Bot¹¹⁸⁵ set out the principles upon which the renewables regulation regime should be derived and therefore set out from the preamble of the Renewables Energy Directive that the EU's renewables regulatory framework puts together a series of measures which seek to reduce overall energy consumption, increase efficiency of energy usage and in so doing reduce carbon emissions.¹¹⁸⁶ The AG noted that member states have a wide discretion when it comes to implementing the policies to support renewable generation and that the directive simply lays down a common framework.¹¹⁸⁷ The AG was clear that the Renewable Energy Directive does permit territorial restrictions on schemes to support renewable energy, this being demonstrated by a literal interpretation¹¹⁸⁸ of the Directive and by its general structure and objectives.¹¹⁸⁹

¹¹⁸⁵ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37, para 10

¹¹⁸⁶ Recital 1, Renewable Energy Directive 2009/28

¹¹⁸⁷ SWD(2012) 164 final, "Commission staff working document — Renewable energy: a major player in the European energy market", para 3.1 pg 8

¹¹⁸⁸ Interpretation of legal instruments based on their wording in the ordinary meaning of the text, sometimes known as the linguistic approach – Giulio Itzcovich, 'The Interpretation of Community Law by the European Court of Justice' (2009) 10(5) German Law Journal, 537

¹¹⁸⁹ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37 para 44 and 51

The AG further considered the limited effects attributed to guarantees of origin. Although the Directive lays down an obligation of mutual recognition in respect of such guarantees, it expressly limits the effect of guarantees issued by other member states, noting in Article 15(9) of the Directive, that certificates are guarantees of origin and do not by themselves confer a right to benefit from national support schemes.¹¹⁹⁰

The AG also considered if Directive Article 3(3) and thus nationally focussed renewables support arrangements are compatible with the provisions of Article 34 TFEU (quantitative restrictions on free movement) and to what extent primary EU law contained in the Treaty takes precedence over the secondary law contained in the Renewable Energy Directive.¹¹⁹¹

The AG confirmed his view of the primacy of the Treaty by stating that secondary law must be assessed by reference to the rules of primary law and specifically freedom of movement in this case.¹¹⁹²

The AG, however, did not consider that Article 194(1) TFEU obliges member states to promote the development of renewable energy and that there is not a hierarchy of Treaty articles. Hence the Renewable Energy Directive in its drafting did not give equal weight to the free movement Articles (28 to 35 TFEU) and the energy Article (194 TFEU). It therefore seems that the Directive has failed to take account of the case-law that the prohibition, laid down in Article 34 TFEU, (quantitative restrictions and of measures having equivalent effect) '*applies not only to national measures but also to measures adopted by the institutions of the EU*',¹¹⁹³ which '*themselves must also have due regard to freedom of trade [between member states], which is a fundamental principle of the common market*'.¹¹⁹⁴ In other words, interpretation should be such, that provisions of the Treaty take precedence.¹¹⁹⁵

The AG also went on to confirm¹¹⁹⁶ that any national measure in a sphere which has been the subject of exhaustive harmonisation at EU level must be assessed in the light of that harmonisation measure and not in the light of primary law.¹¹⁹⁷ It should be noted, however, that in practice the renewable support schemes are not harmonised across the EU and that this may be some time away (see

¹¹⁹⁰ Ibid para 48

¹¹⁹¹ Ibid para 45

¹¹⁹² Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37, para 65

¹¹⁹³ Case C-59/11 *Association Kokopelli v Graines Baumaux SAS* ECLI:EU:C:2012:447, para 80

¹¹⁹⁴ Case C-37/83 *Rewe-Zentral AG v Direktor der Landwirtschaftskammer Rheinland* ECLI:EU:C:1984:89, para 18

¹¹⁹⁵ Case C-305/05 *Ordre des barreaux francophones et germanophone and Others v Conseil des Ministres* ECLI:EU:C:2007:383, para 28

¹¹⁹⁶ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37, para 61

¹¹⁹⁷ Case C-216/11 *Commission v France* ECLI:EU:C:2013:162, para 27

Section 2.12). It has been argued that this lack of harmonisation is the justification for the imposition of strict territorial boundaries to renewable support schemes so that producers do not simply apply for support from the most advantageous scheme whilst locating in the cheapest country to develop renewable schemes (with transport losses or constraints on the electricity transmission system dissipating the benefit).¹¹⁹⁸

The AG ultimately finding that the *Dassonville*¹¹⁹⁹ formula was persuasive.¹²⁰⁰ The AG pointed¹²⁰¹ out that the Swedish renewable scheme granted renewable certificates which were tradeable and as such conferred an advantage to domestically produced electricity, when electricity producers located in other member states did not have access to the green certificate scheme when they export renewable electricity therefore this constitutes a discriminatory restriction on the free movement of goods, which, as such, is prohibited by Article 34 TFEU. The AG did not, however, consider if such an allocation of certificates could also be considered an advantage conferred on certain undertakings in contravention of Article 107(1) TFEU and as such be considered state aid and thus prohibited.

Consistent with the AG's opinion in *Essent 1*,¹²⁰² he argued¹²⁰³ that a renewables regime which is in breach of Article 34 TFEU may be justified under environmental policy provided the regime is able to pass a particularly rigorous proportionality test.

The AG concluded that an attempt to justify infringement of the provisions of the TFEU relating to the free movement of goods by reference to the wording of a lower-ranking rule of law is not justified.¹²⁰⁴ The AG stated that one of the four elements of the EU's environmental policy, set out in Article 191(1) TFEU, is '*prudent and rational utilisation of natural resources*' and as such the development of cross-border trade in renewable electricity which would result from making national support schemes accessible to optimally priced facilities.¹²⁰⁵

Despite the AG not pointing out that Norway and Sweden already have a joint certificate scheme which could have been expanded to include Finland, he

¹¹⁹⁸ Ingg Margrete Ydersbond and Thea Sveen, 'The Aland Case and the Future of Renewables in Europe'. Energi Klima. Available at www.energiogklima.no/kommentar/the-aland-case-and-the-future-of-renewables-in-europe. Accessed on 26 April, 2016

¹¹⁹⁹ Case C-8/74 *Procureur du Roi v Benoît and Gustave Dassonville* ECLI:EU:C:1974:837, para 5 - capable of hindering, directly or indirectly, actually or potentially, trade are prohibited

¹²⁰⁰ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37, para 74

¹²⁰¹ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37, para 77

¹²⁰² Case C-204/12, *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* - ECLI:EU:C:2014:2192

¹²⁰³ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37, para 79

¹²⁰⁴ Opinion of AG Bot in Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten*, ECLI:EU:C:2014:37, para 90

¹²⁰⁵ Ibid para 104

concluded that allowing a scheme which prohibited free movements could not be justified.¹²⁰⁶

Overall the AG has applied a *lex superior* approach to the interpretation and resolution of the dispute, holding that the dispute had to be determined in favour of the provisions of the Treaty and not a *lex specialis* approach finding the Directive to be the instrument with more weight in the resolution of the legal conflict.

The CJEU agreed with the AG in holding that limiting renewable energy support schemes to renewable energy generators on a national basis constitutes a restriction in accordance with the provisions of free movement of goods.¹²⁰⁷ The Court holding that, as specified under Article 3(3) of the Renewable Energy Directive, member states have the right to decide, in accordance with Article 5 and 11 of the Directive, to what extent they will support energy from renewable sources located in other member states.¹²⁰⁸

Additionally, the Court held that Recital 25 of the Renewables Directive allows member states to limit their support schemes¹²⁰⁹ to nationally produced electricity to focus the support schemes to help meet the national renewable targets set out in the Directive. The Court held it essential that member states can determine whether, and to what extent, their national support schemes are to include renewable energy produced in other member states.¹²¹⁰

The Court confirmed it to be established case law¹²¹¹ that Article 34 TFEU applies to, and prohibits any national measure capable of hindering, directly or indirectly, actually or potentially, intra EU trade.¹²¹² The Court stating that the Swedish legislation had hindered imports of renewable electricity from other member states and as such was in conflict with Article 34 TFEU.¹²¹³ However, in the absence of an international agreement allowing certificates from other countries to be used, only certificates awarded under the national scheme can be used to meet the obligation.¹²¹⁴ The Court also held that the scheme allowed the supply of electricity

¹²⁰⁶ Ibid para 128

¹²⁰⁷ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 67

¹²⁰⁸ Ibid para 54

¹²⁰⁹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹²¹⁰ Ibid para 50

¹²¹¹ Case C-8/74 *Procureur du Roi v Benoît and Gustave Dassonville* ECLI:EU:C:1974:837, para. 5, and Case C-379/98 *PreussenElektra*, para. 69.

¹²¹² Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para. 66.

¹²¹³ Ibid, para. 67

¹²¹⁴ Ibid, para. 67 70

to users in combination with renewable certificates as a package, a commercial opportunity not available to suppliers from outside Sweden.¹²¹⁵

The Court noted that the Swedish legislation contains an annual obligation to surrender to the regulatory authority a number of electricity certificates corresponding to the total volume of electricity supplied or consumed, failing which a balancing fee is payable.¹²¹⁶ The CJEU held a market existed where certificates could be traded on fair terms and as such was proportionate.¹²¹⁷

The Court stated that the Swedish legislation constituted a quantitative restriction on imports, and potentially incompatible with Article 34 TFEU.¹²¹⁸ However, the Court went on to justify the quantitative restriction, finding that it was necessary and proportionate to attain the objective of promoting the development of renewable electricity facilities.¹²¹⁹

The Court summarised its reasons in favour of the support scheme,¹²²⁰

- due to a lack of support scheme harmonisation at EU level and as such member states can limit access to support schemes to renewable electricity being produced in their territory,¹²²¹
- it is reasonable for a national support scheme to be designed to directly favour the production of renewable electricity rather than the consumption, as it is at the production stage that the environmental objectives in terms of carbon emission reduction can be pursued,¹²²²
- the EU's international climate commitments require the maximising of the use of renewable energy, therefore justifying the development of a renewables regime in each member state,¹²²³
- that it is essential for member states to be able to control the costs of their renewables support schemes, whilst maintaining investor confidence,¹²²⁴ and
- that there are various mechanisms to enable member states to co-operate, so far as is possible, to achieve their mandatory targets under the Renewable

¹²¹⁵ Ibid, para 71 -73

¹²¹⁶ Ibid, para 105-106

¹²¹⁷ Ibid, para 115

¹²¹⁸ Ibid, para 75

¹²¹⁹ Ibid, para 92

¹²²⁰ Ibid, para 104

¹²²¹ Ibid, para 94

¹²²² Ibid, para 95

¹²²³ Ibid, para 98

¹²²⁴ Ibid, para 99

Energy Directive, which would not be invalidated, if an opening of support schemes was made mandatory by the CJEU.¹²²⁵

The Court again used a *lex specialis* approach to resolve the conflict between the Renewable Energy Directive and the provisions of the Treaty by simply applying the *ADBHU*¹²²⁶ and *Danish Bottle*¹²²⁷ findings as was done in *Essent 1*¹²²⁸ – renewable energy is an EU ‘overriding objective’, which may justify certain limitations of the principle of free movement of goods.

Accordingly, it seems that the Court's general position regarding the possibility of justifying restrictions on trade within the EU is that they can be justified as an express derogation – the *lex specialis* approach.¹²²⁹ The Court simply confirmed that situations capable of hindering intra-EU trade may be justified by the overriding objective¹²³⁰ of environmental protection. Consequently, case law seems to have put in place an extension of the grounds for a derogation related to free movement of goods.¹²³¹ This extension to the grounds for derogation was seen as a long-term regulatory risk by Developer Operators during the empirical research.

In looking at the judgement, wider EU law must be considered. An example of the issues, not considered by the AG or the CJEU, would be the implications of the network development provisions contained in Articles 170 to 172 TFEU. The network development provisions are put in place to facilitate the objectives of Article 26 TFEU (internal market)¹²³² and Article 174 (social cohesion) again issues not considered by the AG or the CJEU. As the proposed renewables facility was on a remote island not connected to the electricity network of its host country, incentivising the facility to be developed would have complied with the policy objectives of integrating remote islands and peripheral regions to the central regions of the EU contained in Article 170(2) TFEU. Additionally, the facility would have complied with the objectives set out in the Electricity Market Directive where it states

¹²²⁵ Ibid, para 100

¹²²⁶ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹²²⁷ Case 302/86 *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹²²⁸ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹²²⁹ Opinion of Advocate General Bot (2013), Joined Cases C-204/12 to C-208/12, *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2013:294, para. 87 and relevant case law such as e.g. the Judgment in Case C-17/92 *Federación de Distribuidores Cinematográficos v Estado Español and Unión de Productores de Cine y Televisión* ECLI:EU:C:1993:172, para 16

¹²³⁰ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹²³¹ Opinion of AG Bot in *Essent 1*, para. 88.

¹²³² Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

'cross-border interconnections should be further developed in order to secure the supply of all energy sources at the most competitive prices to consumers and industry within the Community' and 'paying special attention to the most isolated countries and regions'.¹²³³ In an economic study conducted for the Commission in 2013 it was stated that the annual net economic returns from the completion of the integration of the electricity market are in the range of EUR 12.5-40 billion per year by 2030.¹²³⁴ In relation to *Ålands Vindkraft* as a company the lack of consideration of the network provisions and the failure of the Courts to consider these provisions in any proportionality test could be grounds for an appeal.

Within the empirical phase of this research many of the respondents referred to the need to enhance interconnection as a requirement for the future of renewable generation and as such the CJEU's findings on a simple *ADBHU*¹²³⁵ and *Danish Bottle*,¹²³⁶ *lex specialis* basis as was done in *Essent 1*,¹²³⁷ is considered a definite opportunity missed.

This failure is all the more important when consideration is given to the comments from Commissioner Margrethe Vestager, in charge of competition policy, in the context of a restriction in transmission capacity when it was said:

*Energy should flow freely in Europe so that the electricity produced by a wind mill in one country can reach the consumers in another.*¹²³⁸

Also, in determining *Ålands* case the CJEU has ignored EU Commission 2010 decision rendering legally binding commitments offered by Svenska Kraftnät (SvK) that increased trade in electricity between Sweden and neighbouring countries contributing to a better allocation of resources and, ultimately, to lower prices for customers and end consumers.¹²³⁹ The development of the *Ålands Vindkraft* wind farm would have brought about benefits in the form of financial and material contributions¹²⁴⁰ to the local community's interconnection with the central regions of the EU (Article 170(2) TFEU).

¹²³³ EU Directive 2009/72 (Electricity Markets Directive), Recitals 5 and 6

¹²³⁴ Directorate-General Energy European Commission, Booz & Co, "Benefits of an Integrated European Energy Market", July 2013 – available at

https://ec.europa.eu/energy/sites/ener/files/documents/20130902_energy_integration_benefits.pdf

¹²³⁵ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹²³⁶ Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹²³⁷ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹²³⁸ P/18/2122 Commission Investigation TenneT TSO GmbH's – 19 March 2018 available at http://europa.eu/rapid/press-release_IP-18-2122_en.htm accessed 4 April 2018

¹²³⁹ IP/10/425 Commission Decision Transmission Capacity from Svenska Kraftnät for Sweden – 14 April 2010 available at http://europa.eu/rapid/press-release_IP-10-425_en.htm#top-page accessed 4 April 2018

¹²⁴⁰ Gillian Bristow, Richard Cowell and Max Munday, 'Windfalls for Whom? The Evolving Notion of "Community" in Community Benefits Provisions from Wind Farms' (2012) 43 *Geoforum*, 1108, 1108

Furthermore, the Court failed to find a solution to the issue by building on the already established Norwegian-Swedish¹²⁴¹ electricity 'green certificate' trading scheme, operational since January 2012, by seeking to either include Finland or simply including externally interconnected electricity facilities such as those on the island. This is seen as all the more of a failure, as several cooperation activities and trading schemes had been in consideration prior to 2012.¹²⁴² As an example, Italy imports renewable electricity from Serbia,¹²⁴³ thereby covering part of its renewables production target as specified under the Renewable Energy Directive.¹²⁴⁴ It has been argued that additional benefits can be achieved by cooperation between member states and neighbouring countries under the EU's renewables energy framework, either as a harmonised set of regulations across all EU member states or via cooperation schemes.¹²⁴⁵ Such a framework would address barriers to expansion of renewable facilities more economically and effectively than an unco-ordinated approach at member state level.¹²⁴⁶ Another benefit of such a structure is that it effectively exports EU technical standards and a regulatory model for the renewables sector to its neighbours.¹²⁴⁷

However, the judgement does nothing to move the EU or member states to seek a harmonised regulatory framework for renewable energy which would provide a clear and predictable legal framework for investors in renewable energy facilities.¹²⁴⁸ The desire for a harmonised renewable support scheme¹²⁴⁹ was a

¹²⁴¹ Corinna Klessmann, Erika de Visser, Fabian Wigand, Malte Gephart, Gustav Resch and Sebastian Busch, 'Cooperation between EU member states under the RES Directive. Task 1 Report (2014)', http://ec.europa.eu/energy/renewables/studies/doc/2014_design_features_of_support_schemes_task1.pdf accessed 1 July 2016, 2; See also Henrik Klinge Jacobsen, Lise Lotte Pade, Sascha Thorsten, Schröder Lena Kitzing, 'Cooperation Mechanisms to Achieve EU Renewable Targets' (2014) 63 Renewable Energy 345, 351
¹²⁴² Lena Kitzing, Catherine Mitchell and Poul Erik Morthorst, 'Renewable Energy Policies in Europe: Converging or Diverging?' (2012) 51 Energy Policy, 192, 199

¹²⁴³ Ibid

¹²⁴⁴ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹²⁴⁵ Jan Steinbach, Mario Ragwitz, Veit Bürger, Liv Becker, Lukas Kranzl, Marcus Hummel, Andreas Müller, 'Analysis of Harmonisation Options for Renewable Heating Support Policies in the European Union' (2013) 59 Energy Policy 59

¹²⁴⁶ Ibid, 61; See Also Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) Legal Aspects of EU Energy Regulation (Oxford University Press, 2016), 16

¹²⁴⁷ Tom Casier, 'The Geopolitics of the EU's Decarbonization Strategy: A Bird's Eye Perspective', in Claire Dupont and Sebastian Oberthür (eds) *Decarbonization in the European Union: Internal Policies and External Strategies* (Palgrave Macmillan, 2015), 159; See Also Alexander Mirtchev 'The Greening of Geopolitics' [2013] European Energy Review, 2

¹²⁴⁸ Laurens Ankersmit, "Facilitating" Infringements of Article 34TFEU and the Territorial Nature of Green Electricity Support schemes: Case C-573/12 Ålands Vindkraft v Energimyndigheten' [2014] European Law

¹²⁴⁹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

theme which emerged from the Developer Operator respondents during the empirical research.

Additionally, the *Ålands Vindkraft* judgement is significant for the future development of renewable support schemes as it expands the Court's previous findings with regards to the proportionality of nationally restricted support schemes¹²⁵⁰ as well as the possibility of using the overriding objective of environmental protection¹²⁵¹ to justify restrictions on the free movement of goods, which has already been accepted in several other cases.¹²⁵² Thus the CJEU could in using this *lex specialis* approach could be following a Dworkin constructive approach to interpretation looking at political or moral concerns, related to climate change.¹²⁵³

The focus of the case, as presented to the CJEU, was on the interaction of the national renewables regime and the free movement of goods. However, reflecting on the potentially large capital flows needed to develop renewable electricity facilities in the coming years, neither party seems to have considered that the restriction on the developer is also a restriction on the free movement of capital. Article 63 TFEU protects the free movement of capital, thus aiming at a situation in which business owners can obtain capital and investors can offer their disposable capital in the country where conditions are best, without restriction.¹²⁵⁴

Ultimately it is capital flows and the willingness to invest which will determine the success in achieving the EU's climate change objectives. Simply allowing undertakings to develop renewable generation in locations with the best wind and solar resources, and therefore low cost, which can be transmitted to consumers was also a theme brought out during the empirical research.¹²⁵⁵ The CJEU has therefore reinforced the diagonal conflict between the provisions of the Renewable Energy

¹²⁵⁰ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten*, ECLI:EU:C:2014:2037 para 84

¹²⁵¹ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹²⁵² Example cases covering free movement, competition and state aid - Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160 ; C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:U:C:2014:2192 ; Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:203; Case C-492/14 *Essent Belgium NV v Vlaams Gewest* ECLI:EU:C:2016:732; Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie*, ECLI:EU:C:2013:85; Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060 ; Case C-275/13, *Elcogas SA v Administración del Estado & Iberdrola SA*, ECLI:EU:C:2014:2314; Case T-47/15 *Germany v Commission*, ECLI:EU:T:2016:281; Case C-393/92, *Gemeente Almelo v NV Energiebedrijf IJsselmij* ECLI:EU:C:1994:171

¹²⁵³ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

¹²⁵⁴ W Molle, *The Economics of European Integration: Theory, practice, policy* (Ashgate, 2006), 218

¹²⁵⁵ A Sánchez Graells, 'CJEU protects discriminatory green energy schemes and keeps inconsistency in EU free movement of goods law (C-573/12), (2014) <http://howtocrackanut.blogspot.no/2014/07/cjeu-protects-discriminatory-green.html> (accessed 10 May 2016)

Directive¹²⁵⁶ and free movement; rather than breaking the conflict down to assist in the development of renewable energy schemes in the most appropriate location from a wind and solar resources point of view.

The Court's considerations relating to proportionality can be seen as focusing on how the current system operates, rather than considering if there are better alternative schemes that could be put in place.¹²⁵⁷ The judgement placed considerable emphasis on the market mechanisms for the green certificates and as such the proportionality test was specific to the facts of the case creating long-term regulatory uncertainty due to the need to develop renewable resources wherever possible to meet the Paris COP 21 obligations. It is argued that the judgement should not form a precedent that can be applied generally,¹²⁵⁸ however, it has been used as a precedent in *German Green Levy*,¹²⁵⁹ and *Essent 2*¹²⁶⁰ to name but two.

Also, the restriction in obtaining access to another member state's renewables support scheme, such as was appealed in *Ålands Vindkraft*, remains widespread across the EU in 2018, with this model being used in the 2018 'concession'¹²⁶¹ tendering round taking place in, of all places, Finland, where access to the renewables support scheme is restricted to projects within Finland or Finnish territorial waters.¹²⁶²

The 'law' of unintended consequences can be seen to be in operation generally with regards to the provision of subsidies within the renewable energy sector. It seems clear that EU member states do not want electricity which has received a subsidy, paid for by their domestic consumers, to be exported. This issue can be regarded as creating a regulatory volatility as the potential change in the regulatory position is not readily forecastable.¹²⁶³

¹²⁵⁶ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹²⁵⁷ C Ryckman, 'EU Court Allows Discriminatory Green Energy Support Schemes', (2014) National Law Review <http://www.natlawreview.com/article/eu-court-allows-discriminatory-green-energy-support-schemes> (accessed 1 April 2016)

¹²⁵⁸ Catherine Banet, 'The EU Court Of Justice rules in favour of Sweden in the Åland Vindkraft Case', July 2014, <http://www.ecohz.com/facts-news/news/aaland-case> (accessed 1 September 2016)

¹²⁵⁹ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281

¹²⁶⁰ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

¹²⁶¹ From 2016 renewable electricity projects are required to enter an auction process such that the lowest cost projects would receive price support at the price the project has bid into the auction. The resulting renewables support scheme instrument is a contract for difference in accordance with Renewable Energy Directive Article 3(2); See European Commission guidance for the design of renewables support schemes, SWD(2013) 439 final; COM(2015)80 final; <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2015:80:FIN>

¹²⁶² The concession tendering round established in accordance with the Finnish Electricity Produced from Renewable Energy Sources Act (1396/2010): See Sanna-Mari Seppälä 'Renewable Energy Tenders are Won by Well-Planned Projects' [2018] Castrén & Snellman available at <https://www.castrén.fi/blogandnews/news-2018/renewable-energy-tenders-are-won-by-well-planned-projects/> accessed 25 October 2018

¹²⁶³ Sverre Jensen, Kristina Mohlins, Karen Pittelz, and Thomas Sterner, 'An introduction to the green paradox: the unintended consequences of climate policies' (2015) 9 Review of Environmental Economics and Policy, 246

In a wider context, a series of organisations have made comments on the judgement, to the effect that the EU should develop a regulatory framework which supports renewables through an increased use of *'cooperation mechanisms and better market integration in line with the energy and environment state aid guidelines'*.¹²⁶⁴ It has also been pointed out that the judgement in *Ålands Vindkraft* allows the *'continuation of protectionist electricity support schemes which encourage electricity producers to go for the highest subsidies and not the most cost-efficient new renewables'*.¹²⁶⁵ The European Wind Energy Association in contrast supported the judgement, by stating the ruling brought clarity to the EU's regulatory framework for renewable wind power.¹²⁶⁶ However, the European Wind Energy Association does not make mention of the diagonal conflicts with wider EU law and the potential for the *'overriding requirement of environmental protection'*¹²⁶⁷ to be superseded, thereby bringing an end to the regulatory framework that has effectively removed renewable electricity from the need to compete for dispatch, or, on price, with the rest of the electricity industry.

Such a situation may well be sustainable when the objective of the Renewable Energy Directive¹²⁶⁸ is the achievement of a target 20% of generation from renewable sources by 2020. However, with the need to increase this level by 2030¹²⁶⁹ and 2050¹²⁷⁰ to achieve the Paris COP 21 agreement target of restricting temperature rise to 2°C, renewables will be the modal generation form. The empirical research set out in Chapter 5 outlines the concerns of market operators related to a paradigm shift in the regulatory framework – this is regarded as regulatory volatility in that the change in the regulatory framework is not forecastable. Therefore, the outcome in this case is not seen as positive in terms of regulatory certainty by respondents to this research.

¹²⁶⁴ EURELECTRIC Secretary General Hans ten Berge <http://www.eurelectric.org/news/2014/efforts-towards-europeanisation-of-res-policies-remain-crucial,-eurelectric-reaffirms/>

¹²⁶⁵ Renewable Energy CS International <http://www.recs.org/news/european-court-of-justice-rules-against-the-advocate-general-s-opinion-in-aland-vindkraft-case>

¹²⁶⁶ Justin Wilkes Deputy Executive Officer of The European Wind Energy Association

¹²⁶⁷ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten*, ECLI:EU:C:2014:2037 para 76 and 80

¹²⁶⁸ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹²⁶⁹ COM(2016) 860 30 November 2016 'Clean Energy For All Europeans'

¹²⁷⁰ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

3.5.3 Acceptance of Foreign Certificates & External competence of EU - *Green Network*¹²⁷¹

A third case related to the diagonal conflict between the Renewable Energy Directive¹²⁷² and free movement of goods and very much building on the findings in *Essent 1*¹²⁷³ and *Ålands Vindkraft*¹²⁷⁴ is *Green Network*. The *Green Network* case relates to the recognition of a certificate of origin similar to *Dassonville*.¹²⁷⁵ Whilst *Ålands Vindkraft*¹²⁷⁶ related to the refusal by a member state to allow renewable electricity from another member state to have access to its green certificate scheme, *Green Network* looks at the refusal of the Commission to allow recognition of a certificate of origin for renewable electricity from non-EU member country (Switzerland) to be recognised by a utility company in a member state, namely Italy. The case is important as at the time Italy was also importing renewable electricity from Serbia, a practice which managed to be unaffected by this dispute.¹²⁷⁷

An Italian energy company, Green Network SpA ('Green Network'), imported renewable electricity from Switzerland. Under Italian law, energy companies were required to purchase a certain number of green certificates each year but could seek an exemption where they imported renewable energy from countries with analogous laws promoting renewable energy. Where the exporting country was not a member of the EU, the exemption was available only upon prior agreement between the importing and exporting countries regarding recognition of guarantees of origin. When Green Network requested an exemption from its obligation to purchase green certificates, the Italian transmission system operator rejected the request because there was no agreement regarding guarantees of origin between Italy and Switzerland at the time the renewable energy was imported. Green Network brought an action via the Italian courts, which was dismissed. Green Network appealed the dismissal, because the Italian grid operator had a technical

¹²⁷¹ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

¹²⁷² Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹²⁷³ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹²⁷⁴ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹²⁷⁵ Case C-8/74 *Procureur du Roi v Benoît and Gustave Dassonville* ECLI:EU:C:1974:837

¹²⁷⁶ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹²⁷⁷ Lena Kitzing, Catherine Mitchell and Poul Erik Morthorst, 'Renewable Energy Policies in Europe: Converging or Diverging?' (2012) 51 *Energy Policy*, 192, 199; See Also <http://www.balkaninsight.com/en/article/serbia-italy-sign-energy-deal>

cooperation agreement in place with Switzerland in relation to flows across the electricity network interconnections between the two countries.

The Italian appeals court sought a preliminary ruling from the CJEU, *inter alia*, whether the Italian law related to the recognition of the green certificates from a non-EU country conflicted with Renewable Energy Directive¹²⁷⁸ and other elements of the EU's renewable energy regulatory framework.

The CJEU firstly held that the exclusive competence¹²⁷⁹ to put in place external agreements for the recognition of renewable schemes from third countries rested with the Commission,¹²⁸⁰ even though a free trade agreement existed between Switzerland and the EU.¹²⁸¹

Secondly the CJEU held that a technical support agreement related to electricity dispatch¹²⁸² between transmission system operators did not constitute an intention between the two countries to form a binding renewable electricity origins recognition agreement,¹²⁸³ which in any case would be void as the member state had no competence in this area.

This judgement seems to have misplaced the 'overriding objective'¹²⁸⁴ of reducing carbon emissions in favour of a legal technical requirement to put in place a recognition agreement. Never-the-less the CJEU has confirmed that the Commission holds the competence to put in place renewable electricity origin recognition agreements with the EU's neighbours. It is known that the Renewable Energy Directive has a shared competence structure and is C&C in nature, this judgement confirms an element of the competence split between the Commission and the member state. This judgement shows that whilst the member states have

¹²⁷⁸ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹²⁷⁹ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹²⁸⁰ *Ibid*, para 65

¹²⁸¹ Switzerland & EU Free Trade Agreement, 22 July 1972 OJ L 300, 31/12/1972 available at http://trade.ec.europa.eu/doclib/docs/2007/january/tradoc_133045.pdf accessed 20 August 2018

¹²⁸² 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE

¹²⁸³ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399, para 74; the Court stating the issue was the same as was analysed in Case C-22/70 *Commission v Council* (European Road Transport Agreement) ECLI:EU:C:1971:32

¹²⁸⁴ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

competence to determine renewable electricity support schemes within their sovereign territory, should member states seek to support renewable electricity facilities in non-member states the Commission has the competence to put in place the recognition agreement.

This judgement has also failed to take account of the duty to promote the development of renewable energy contained in Article 194(1)(c) TFEU. Also, the CJEU has fettered the member state's competence to determine between different energy sources and the general structure of its energy supply contained in Article 194(2) TFEU.

The requirement for recognition agreements being all the more pressing as the Paris COP 21 commitments become effective upon the EU and its member states.

Most importantly the CJEU has failed to recognise the member state's competence to conclude international agreements set out in Article 191(4) TFEU in relation to environmental protection, which could extend to the promotion of renewable electricity generation.

The outcome of this case is unsatisfactory on several levels. Firstly, the confirmation of the Commission's exclusive competence to put in place renewables recognition agreements with non-EU countries seems to place an unnecessary layer of administration into the process. Secondly the Commission is not known to have in place a protocol or guidance document on how a member state should request such a recognition agreement and how the Commission will then seek to negotiate such an agreement. Thirdly the negotiation of such an agreement by national or EU institutions is suggested to place an unnecessary delay into the system, when speedy recognition is needed to allow the conclusion of applicable renewable support schemes on a utility company to utility company basis. This bilateral utility to utility negotiation is believed to become increasingly important for an industry that is likely to move to a position where renewable electricity facilities are developed on the back of power purchase agreements (PPA) between the facility's owner and the consumer of the electricity (the so called corporate PPA),¹²⁸⁵ especially as the

¹²⁸⁵ The fact of the numerous corporate law firms that have reports ('how to documents') on this subject on their web sites shows how important this is to the developers of renewable electricity - Baker McKenzie 'The Rise of Corporate PPAs: A New Driver for Renewables' [2018] <https://www.bakermckenzie.com/-/media/...corporate-ppas/riseofcorporateppas.pdf?>; Norton Rose Fulbright 'Corporate renewable PPAs – a framework for the future?' [2017] <http://www.nortonrosefulbright.com/knowledge/publications/149117/corporate-renewable-ppas-a-framework-for-the-future>; DLA Piper 'Corporate Power Purchase Agreements (PPAs): What are they?' [2016] <https://www.dlapiper.com/en/uk/insights/publications/2016/06/renewable-energy-global-paper/what-are-corporate-power-purchase-agreements-ppa/>; Bird & Bird 'Corporate PPAs: An International Perspective' [2017] <https://www.twobirds.com/-/media/articles/international-corporate-ppas-brochure.pdf?la=en>; CMS 'Unlocking the Corporate PPA Market' [2018] <https://cms.law/en/GBR/Events/Breakfast-Seminar-Unlocking-the-Corporate-PPAs-Market>

industry moves to a subsidy free future and the importance of revenue enhancing support schemes recedes.¹²⁸⁶

3.5.4 Free Movement of Goods – purchase criteria – Public Procurement & the German Stadtwerke¹²⁸⁷ System

The procurement of electricity by public bodies either for their own consumption or consumption by others is an increasingly important issue. The purchase of electricity by public bodies falls within the EU's public procurement regulatory framework. A very important group in this context is the German Stadtwerke system as they can directly support the development of renewable electricity facilities via the purchase criteria and pricing mechanisms applied – especially important as renewables moves from a regulatory regime of state intervention via member state sponsored support scheme, to a corporate power purchase agreement regime. As an example of the volume of wind energy being sold via the corporate power purchase agreement route it has been reported that some 235MW of capacity is subject to this arrangement in the UK.¹²⁸⁸

Public procurement rules have the same basic objectives as the rules prohibiting state aid (Article 107 TFEU): both seek to prevent distortions to competition caused by the behaviour of public authorities,¹²⁸⁹ yet they protect competition by preventing different kinds of behaviour. Public procurement rules prohibit the granting of discriminatory rights and privileges in the form of contracts,

¹²⁸⁶ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

¹²⁸⁷ Stadtwerke are communal companies, owned by a city or region, which offers public services for to the city and/or the region. For example Stadtwerke München (Munich City Utilities) or SWM is a German communal company, owned by the city of Munich, which offers public services for the city and the region of Munich. The company supplies electricity for more than 95% of Munich's 750.000 households[3] as well as natural gas, drinking water and, through its stake in the M-net Telekommunikations, telecommunications services. SWM is Europe's largest municipal utility company and ranks among Germany's principal energy providers. Expanding use of renewable energy has been a central element in the company's strategy since 2008. – Sophie Vorrath, 'Will Munich be world's first 'megacity' to reach 100% renewables?' [2014] Renewable Economy available from <https://reneweconomy.com.au/will-munich-be-worlds-first-megacity-to-reach-100-renewables-28292/> ; See Also the undertaking's web site <https://www.swm.de/english.html>

¹²⁸⁸ The capacity is composed of EDF 72MW, BSR 61MW, Eneco 60MW, Pennant Walters 23MW, Baywa 15MW and Shanks 4MW – Ben Hall, 'Steady as she goes: the rise of the Corporate PPA' [2018] Energy Perspectives Cornwall Consulting Market Report 24 September 2018; See also Baker MacKenzie 'The rise of corporate PPAs: A new driver for renewables' [2015] available at <https://www.bakermckenzie.com/-/media/files/insight/publications/2015/12/the-rise-of-corporate-ppas/rise-corporate-ppas.pdf?la=en> accessed 24 September 2018; Norton Rose Fulbright 'Corporate renewable PPAs – a framework for the future?' [2017] <http://www.nortonrosefulbright.com/knowledge/publications/149117/corporate-renewable-ppas-a-framework-for-the-future>; DLA Piper 'Corporate Power Purchase Agreements (PPAs): What are they?' [2016] <https://www.dlapiper.com/en/uk/insights/publications/2016/06/renewable-energy-global-paper/what-are-corporate-power-purchase-agreements-ppa/>; Bird & Bird 'Corporate PPAs: An International Perspective' [2017] https://www.twobirds.com/~/_media/articles/international-corporate-ppas-brochure.pdf?la=en; CMS 'Unlocking the Corporate PPA Market' [2018] <https://cms.law/en/GBR/Events/Breakfast-Seminar-Unlocking-the-Corporate-PPAs-Market>

¹²⁸⁹ Phedon Nicolaides, 'Public Procurement and State Aid' [2018] State Aid Hub <http://stateaidhub.eu/blogs/stateaiduncovered/post/9299>

while state aid rules prohibit the discriminatory granting of public resources and thus they must be considered as a separate area of conflict with EU primary law.

As electricity has been declared 'goods', the purchase of electricity by the State or organs of the state falls within the Public Procurement Directive,¹²⁹⁰ such that all contracts for electricity above an annual amount of €207,000,¹²⁹¹ purchased by Governmental organisations, must be tendered.

The Public Procurement Directive allows the inclusion of procurement criteria relating to renewable energy - for example environmental criteria in any technical specification (Article 42(3)(a)) and the use of eco-labels (Article 43(1)). Additionally, Annex XII of the Procurement Directive states the technical specification can require the seller to prove the origin of the electricity in terms of its environmental criteria as it is an invisible 'good' and can only be determined by origin rather than its nature on delivery (all electrons are the same when they arrive at the consumer's premises).

The Directive in Recital 1 states procurement on behalf of member states' or public authorities has to comply with the free movement of goods. Additionally, the Directive prohibits the specification of a 'specific origin' of the electricity in Directive Article 42.

Therefore, the requirement placed on member states or public authorities to comply with the free movement of goods in the purchase of electricity either for own use or onward selling conflicts with the ability within the Renewable Energy Directive to put in place nationally focussed renewables support schemes.¹²⁹²

Thus, a difference is opened between the production of renewable electricity where free movement can be restricted and supply by public authorities where it cannot. This difference, can be seen as an internal conflict within the renewables regulatory regime as a member state can restrict the application of its renewables support scheme only to generating facilities within national boundaries. However, where the state purchases electricity for itself or others it can set out stringent renewable criteria in its technical requirements but not a restriction on origin.

This creates a regulatory uncertainty, as in many cases the same company will be involved in both activities.

¹²⁹⁰ EU Directive 2014/24/EU 'Directive on Public Procurement' *OJ L 94*

¹²⁹¹ *Ibid* Directive Article 4

¹²⁹² 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

3.5.5 Free Movement & State Aid: Energy Taxation – equivalent effect & Selective Measure - *Outokumpu Oy*¹²⁹³

Another area which potentially restricts the free movement of goods and is incompatible with the single market, is cross-border energy taxation.¹²⁹⁴ Whilst tax authorities enjoy considerable discretion in schemes of taxation, the other side of that coin is that tax is a selective measure and thus potentially state aid.¹²⁹⁵

Energy taxation is a member state competence¹²⁹⁶ (a measure of a fiscal nature Article 194(3) TFEU),¹²⁹⁷ however, coordination is necessary, as energy traded in one country can be used in another. Hence when neighbouring member states put in place different energy taxation systems, this induces sub-optimal decisions with regards to the development of renewable electricity generating facilities, especially as the interactions with the wider economy and industrial policies are considered.¹²⁹⁸

In certain instances such tax outcomes discourage the development of renewable electricity as a conflict exists between the desires of the Renewable Energy Directive¹²⁹⁹ and general energy taxation. Noting the EU can only act where such nationally imposed taxes distort the internal market,¹³⁰⁰ and in any event the Council has to act unanimously in accordance with Article 113 TFEU to put in place a harmonised energy tax regime which seems to be unlikely in the near future.¹³⁰¹

¹²⁹³ Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155

¹²⁹⁴ Gloria Marín Benítez, 'The European Union, the State Competence in Tax Matters and Abuse of the EU Freedoms' in José Manuel Almudí Cid, Jorge Ferreras Gutierrez and Pablo Hernandez Gonzalez-Barreda (eds) *Combating Tax Avoidance in the EU: Harmonization and Cooperation in Direct Taxation* (Wolters Kluwer, 2019).

¹²⁹⁵ Cases T-131/16, *Belgium v Commission* ECLI:EU:T:2019:91 and T-263/16, *Magnetrol International v Commission* ECLI:EU:T:2019:9 - annulled Commission decision 2016/1699

¹²⁹⁶ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹²⁹⁷ Ian Parry and Herman Vollebergh, 'Reforming the EU Energy Tax Directive: Assessing to Options' (2016) CESIFO Working Paper No 5749, 2; See Also Dörte Fouquet and Jana Viktoria Nysten, 'The Legal Helpdesk Energy Taxation in the EU' Becker, Butner and Held

¹²⁹⁸ Edward Foster, Marcello Contestabile, Jorge Blazquez, Baltasar Manzano, Mark Workman and Nilay Shah, 'The unstudied barriers to widespread renewable energy deployment: Fossil fuel price responses' (2017) 103 *Energy Policy*, 258

¹²⁹⁹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹³⁰⁰ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹³⁰¹ Article 113 TFEU, specifically provides for the Council, acting unanimously in accordance with a special legislative procedure and after consulting the European Parliament and the Economic and Social Committee, to adopt provisions for the harmonisation of member states' rules in the area of indirect taxation because indirect

Increasingly environmental priorities, and international commitments to abate carbon emissions, have led to the heightened use of progressive energy taxation¹³⁰² encouraging the use of renewable energy by levying lower taxes on environmentally friendly forms of energy¹³⁰³ (the EU does not directly use energy taxation to incentivise the development of renewable electricity).¹³⁰⁴

What applicable energy taxes there are within the EU are levied on generation facilities, as one cannot distinguish the method of production by an analysis of the final product,¹³⁰⁵ as the source of electricity on the transmission system is not determinable (*'non-product related production processes and methods'* all electrons are the same).¹³⁰⁶

Despite the issues outlined, it has been stated that carbon taxes would be more efficient in reducing global warming than the current emissions trading system, whilst taxes also recycle the tax revenues generated into the economy of the collecting country rather than simply transferring revenues between emissions generating and credit selling companies.¹³⁰⁷ Although the tax regime can be designed to be progressive related to the amount of carbon emitted, it is hard to design a regime that is fully reflective of the costs of carbon reduction at source across a number of producers or consumers. If carbon taxes are levied entirely on producers then all consumers are incentivised to reduce consumption to the extent the producer taxes are passed through, which may not be to the same extent. Rather than those who can reduce further doing so and reaping additional benefits in the carbon market.

To be neutral, carbon taxes must be recycled into general taxation facilitating a reduction in corporation taxes and the like. Recent French experience, however, indicates that carbon tax increases not based on substantial revenue and

taxes may create an immediate obstacle to the free movement of goods. Directives related to environmental and energy taxation have established the EU's position: available https://ec.europa.eu/taxation_customs/general-information-taxation/eu-tax-policy-strategy/lisbon-Treaty-tax-legislation-eu_en accessed 30 March 2018

¹³⁰² Sanja Filipović, and Mirjana Golušin, 'Environmental taxation policy in the EU—New methodology approach' (2015) 88 *Journal of Clean Products*, 308; See Also Ernst von Weizsäcker 'Ecological Tax Reform' in Ernst von Weizsäcker (eds) *A Pioneer on Environmental, Climate and Energy Policies* (Springer, 2014), 99; Mikael Skou Andersen, 'Towards a level playing field for EU's energy-related taxation' in Karen Pittel, Ian Parry and Herman Vollebergh (eds) *Energy Tax and Regulatory Policy in Europe: Reform Priorities* (MIT Press, 2017)

¹³⁰³ Friedemann Polzin, Michael Migendt, Florian Täume and Paschenvon Flotow, 'Public policy influence on renewable energy investments—A panel data study across OECD countries' (2015) 80 *Energy Policy*, 98

¹³⁰⁴ Directive (2003/96/EC) 27 October 2003 'Restructuring the Community framework for the taxation of energy products and electricity' (Energy Taxation Directive) (OJ L 283, 31.10.2003, pp. 51–70)

¹³⁰⁵ Case C-379/98 *PreussenElektra AG v Schleswag AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹³⁰⁶ Maria Alejandra Calle Saldarriaga, 'Non-product related environmental process and production methods (NPR-PPMs): a view from international trade law and international environmental governance' (2014) PhD Thesis, University College Cork; See Also Erich Vranes, 'Processes and Production Methods: A Special Case under the GATT and the TBT Agreement?' in Erich Vranes (ed) *Trade and the Environment Fundamental Issues in International Law, WTO Law, and Legal Theory* (Oxford University Press, 2009)

¹³⁰⁷ Jeremy Carl and David Fedor, 'Tracking global carbon revenues: A survey of carbon taxes versus cap-and-trade in the real world' (2016) 96 *Energy Policy*, 50; See Also Ian Parry, Dirk Heine, Shanjun Li and Eliza Lis, 'Getting Energy Prices Right From Principle to Practice' (2014) International Monetary Fund

distributional neutrality may not be viable.¹³⁰⁸ Hence carbon trading removes these issues and allows both producer and consumer to participate in market activities.

The EU's system of minimum tax rates is applied to coal; natural gas and electricity, but energy products and electricity are only taxed when used as motor or heating fuel.¹³⁰⁹

The Energy Tax Directive is motivated by concerns related to the environment and energy dependence as well as tax competition between member states (e.g. one country setting excessively low tax to attract mobile tax bases from other countries).¹³¹⁰ As a result of the limited scope of the Energy Taxation Directive, member states have a wide margin of discretion in relation to energy taxation.¹³¹¹ There are limits, however, to this discretion as outlined by the Council's ability to act in accordance with Article 113 TFEU and the findings within *Outokumpu Oy*¹³¹² case.

The CJEU illustrated the difficulties associated with the cross-border energy taxation of electricity in *Outokumpu Oy*. The *Outokumpu* case also shows that discrimination against electricity imports would indeed be caught by the Commission's competence in this area.¹³¹³

In *Outokumpu Oy*, the ECJ adopted a strict approach to member states' use of tax instruments to distinguish between renewable, fossil and nuclear generation capacity. Under Finnish tax law, excise duty on electricity was levied on electricity produced domestically, the amount of the duty depending on the method of production (highest tax for electricity produced by nuclear plant, lower for hydroelectricity, with small generating stations being exempt).¹³¹⁴ In relation to imported electricity, the excise duty charged, regardless of the method of production, was a set duty – the amount being set broadly mid-range for domestic production.

¹³⁰⁸ Steven Geroe, 'Addressing Climate Change Through a Low-Cost, High-Impact Carbon Tax' (2019) 28(1) *Journal of Environment & Development*, 3

¹³⁰⁹ Energy Taxation Directive, Article 4

¹³¹⁰ Ian Parry and Herman Vollebergh, 'Reforming the EU Energy Tax Directive: Assessing to Options' (2016) CESIFO Working Paper No 5749, 2

¹³¹¹ In moving the EU's climate change forward the EU has a commitment to bring energy taxation more closely in line with its energy and climate change objectives (See March 2008 European Council Conclusion - European Council of 13-14 March 2008, Presidency conclusions (7652/1/08 rev.1, 20/05/2008). In 2012 a proposal to amend the Energy Taxation Directive (2003/96/EC) was made to implement the 2008 Council resolution (European Parliament, Legislative resolution of 19 April 2012 on the proposal for a Council Directive amending Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity, 2011/0092(CNS)), such that tax rates would be aligned to a fuel's carbon content and develop a minimum price for carbon emissions to create a floor price within the European Emission Trading System. However, in 2015 the Commission issued a notice of withdrawal of the proposals related to tax harmonisation (European Commission, Withdrawal of Commission proposals, 2015/C 80/08), due to practical difficulties of implementation and concerns related to the damage a carbon floor price would have on the economies of new accession countries. – See Ian Parry and Herman Vollebergh, 'Reforming the EU Energy Tax Directive: Assessing to Options' (2016) CESIFO Working Paper No 5749, 2

¹³¹² Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155

¹³¹³ Étienne Durand and Malcolm Keay, 'National support for renewable electricity and the single market in Europe: the Ålands Vindkraft case' [2014] Oxford Institute for Energy Studies

¹³¹⁴ Law No 1473/94 Excise Duty, Para 4

This average system of tax was used as the generation source could not be determined at the border.

This called into question the application of Article 110 TFEU (at the time, Article 90 TEC) where it states that member states may not impose discriminatory taxation on imported goods and that taxes may not afford a form of trade protection to domestic goods. With regards to the outcome of the case, AG Jacobs and the Finnish Government had suggested leniency, in the light of the ecological objectives of the regulations, and of technical difficulties of determining the source of the electricity.¹³¹⁵

The Court accepted that the tax on electricity may vary according to the way the electricity is produced,¹³¹⁶ in so far as the variation is consistently based on environmental considerations.¹³¹⁷ However, the Court referred to earlier case law which stated that Article 110 TFEU is infringed where the taxation on the imported product and that on the similar domestic product are calculated in a different manner and this leads to higher taxation being imposed on the imported product.¹³¹⁸

The Court held that practical considerations in levying the same kind of tax, particularly due to the difficulty in determining the method of production of imported electricity, could not justify the use of an average tax rate and thus the infringement.¹³¹⁹ The Court dismissed all issues with regards to the determination of the source of the electricity and rather than imposing a tax, calculated as a national average it held that Finland should have imposed the lowest tax rate on imported products.¹³²⁰ The Court stated that the measure was disproportionate, as the Finnish authorities did not allow importers the opportunity to present certificates of origin.¹³²¹

The ECJ applied the principle of non-discrimination strictly. This was an approach used in previous case law, such as *Haahr Petroleum*,¹³²² where Article 110 TFEU was applied. Here, the Court held that national legislation can only be compatible with Article 110 if it excludes higher taxation of imported products in all instances. However, Article 110 TFEU, which *Alfons Lütticke*¹³²³ has declared to be directly effective, states that taxes imposed on imported goods in excess of those imposed on the same or similar domestic products are discriminatory. Given the

¹³¹⁵ Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155, para 33

¹³¹⁶ Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155, para 31

¹³¹⁷ *Ibid*, para 24

¹³¹⁸ Case C-152/89, *Commission v Luxembourg* ECLI:EU:C:1991:272, para 20

¹³¹⁹ Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155, para 37

¹³²⁰ *Ibid*, para 36

¹³²¹ *Ibid*, para 39-41

¹³²² Case C-90/94 *Haahr Petroleum v Åbenrå Havn, Ålborg Havn, Horsens Havn, Kastrup Havn NKE A/S, Næstved Havn, Odense Havn, Struer Havn and Vejle Havn, and Trafikministeriet*. ECLI:EU:C:1997:368

¹³²³ Case C-57/65 *Alfons Lütticke GmbH v Hauptzollamt Sarrelouis* ECLI:EU:C:1966:34

importance placed on the functioning of the internal market¹³²⁴ the Court has interpreted Article 110 TFEU widely when it stated in *Stadtgemeinde Frohnleiten* ‘so as to cover all procedures which, directly or indirectly, undermine the equal treatment of domestic products and imported products’.¹³²⁵ This approach seems to have confirmed the stance in *Grundig*.¹³²⁶

In the *Outokumpu* case the ECJ held that Article 110 does not restrict the freedom of each member state to put in place tax regimes which differentiate between certain products (i) based on consistently applied objective criteria and (ii) if it pursues economic or social policy objectives which are themselves compatible with the requirements of the Treaty and secondary law. Additionally, the Court held such a system was allowed if the regime is free from any form of discrimination, direct or indirect, regarding imports from other member states or any form of protection of domestic products. The Court’s decision in *Outokumpu Oy* confirmed the earlier finding in *DaimlerChrysler v Land Baden-Württemberg*¹³²⁷ (within the context of self-sufficiency, proximity and priority for recovery) that extraterritorial application of a member state’s environmental framework is prohibited.

The Court’s ruling that environmental taxes should be non-discriminatory and have an absence of protective effect for domestically produced energy, is important for the development of feed-in tariffs and the development of cross-border traded electricity markets. Therefore, if the aim of an environmental tax regime is the elimination or limiting of the production of a form of electricity generation it must not do so at the expense of treating imported products differentially. Some form of differential tax regime could be viewed as reasonable to maintain the competitiveness of domestic energy industries who are responding to global environmental problems via emissions reduction efforts, which raise energy prices to overcome the ‘free rider’¹³²⁸ issue, provided it is not discriminatory. However, despite renewable energy guarantees of origin (REGO)¹³²⁹ schemes which provide transparency as to the origin of electricity supplied, the *Outokumpu* case demonstrates the practical difficulties in determining the source of electricity flowing

¹³²⁴ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516; See Also Peter Cameron, ‘The Internal Energy Market – Redefining Objectives’ Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 5

¹³²⁵ Case C-221/06 *Stadtgemeinde Frohnleiten and Gemeindebetriebe Frohnleiten GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2007:657, para 40

¹³²⁶ Case C-68/96 *Grundig Italiana SpA v Ministero delle Finanze*, ECLI:EU:C:1998:299

¹³²⁷ Case C-324/99 *DaimlerChrysler AG v Land Baden-Württemberg* ECLI:EU:C:2001:682

¹³²⁸ Ian Parry and Herman Vollebergh, ‘Reforming the EU Energy Tax Directive: Assessing to Options’ (2016) CESIFO Working Paper No 5749, 2

¹³²⁹ Renewable Energy Directive Article 15

between member states (once on the transmission network electrons are indistinguishable).

The significance of the *Outokumpu Oy* case is not just the effective ending of energy taxation at the border but is the simplification of the contractual and regulatory framework surrounding cross-border electricity trading hub terms (a form of market-based solution).¹³³⁰

It being known that the nationally focussed renewable electricity support mechanism restrict the effective functioning of the single market in electricity; it being further argued that the many different national support schemes¹³³¹ hamper the development of a potentially unified market for deploying and developing renewable energy technologies.¹³³² Therefore, removing the burden to collect differential levels of tax based on a REGO,¹³³³ means that prices quoted on trading hubs need only specify volumes to be traded, delivery location and the term of the trade. It is known that increasing simplicity and transparency are determinants of increased market liquidity,¹³³⁴ which in turn increases efficiency of price discovery¹³³⁵ and market efficacy.¹³³⁶ This is especially important (i) as the costs of renewable electricity transition to a price point compatible with the wholesale price of thermal generation¹³³⁷ and (ii) the removal of the need for renewable electricity support

¹³³⁰ The trading hub or power exchange is the heart of the electricity market. The power exchange's members will consist of producers, retailers and traders as well as large end users. The exchange will trade a series of standard products in both volume and time, with the delivery location and other technical details relating to the trade set out in a trade master agreement. Each individual trade will in effect be a supplemental agreement to this trade master agreement. The market price is determined by supply and demand considerations, with both varying during the day, a different price is determined for each trading period (usually an hour, or in the UK half hour). The market price may vary somewhat between different market regions, depending on physical transmission limitations that sometimes occur and the generation mix within each region. Available at <https://corporate.vattenfall.com/about-energy/energy-markets/> accessed 22 April 2018

¹³³¹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹³³² European Federation of Energy Traders 'Towards a single European energy market' (2012), 15 available at <http://www.efet.org/Files/Documents/Energy%20Background/Highlights-II-Final.pdf> accessed 30 March 2018

¹³³³ renewable energy guarantees of origin – EU COM 'The Energy community Legal Framework 2018' 4th Edition OJ L198, 20/07/2006, p 18 available at <https://www.energy-community.org/legal/Treaty.html> accessed 30 March 2018

¹³³⁴ Karsten Neuhoff, Carlos Batlle, Gert Brunekreeft, Christos Konstantinidis, Christian Nabe, Giorgia Oggioni, Pablo Rodilla, Sebastian Schwenen, Tomasz Siewierski and Goran Strbac, 'Flexible Short-Term Power Trading: Gathering Experience in EU Countries' (2015). DIW Berlin Discussion Paper No. 1494.

¹³³⁵ Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHG> accessed 30 March 2018

¹³³⁶ Craig Holden, Stacey Jacobsen and Avanidhar Subrahmanyam, 'The Empirical Analysis of Liquidity' (2014) 8(4) Foundations and Trends in Finance, 263

¹³³⁷ Hornsea Project Two: offshore wind farm supply chain plan: available at <https://www.gov.uk/government/publications/contracts-for-difference-2nd-allocation-round-supply-chain-plans-for-projects-over-300mw-which-secured-contracts-2017> accessed 30 March 2018

mechanisms¹³³⁸ (in which case renewable electricity will need to rely on the normal mechanisms of price discovery), forward long-term carbon price contracts or power price hedging.¹³³⁹ It is also likely that regulated support mechanisms will be replaced by bilateral, corporate to corporate power purchase agreements (PPA)¹³⁴⁰ which will provide price certainty over the long-term and provide consumers with renewable electricity to meet their regulatory obligations from other Directives outside the scope of this research.

The *Outokumpu Oy* findings were confirmed in a series of cases¹³⁴¹ and most recently in *Sucrierie de Toury*¹³⁴² where it was again held that in accordance with Article 14(1)(a) of the Energy Taxation Directive¹³⁴³ in relation to energy products used for the generation of electricity, and electricity itself, there is an obligation to exempt the same from taxation and also in accordance with Article 15(1)(c), energy products used for combined heat and power generation should also be exempt, as should gas intended for use in the cogeneration of heat and electricity. This is effectively ensuring a single layer of electricity taxation focussed on the point of consumption by the end user. Rather than taxing the fuel used for generation as well as the resulting electricity.

The removal of energy taxation on electricity provides a clear focus on the EU-ETS (See Section 2.10.1) preventing a potential split or conflicting focus within the regulatory framework. Setting aside any considerations of the failures of the EU-ETS, the removal of border taxation of electricity flows has been successful in focusing the general abatement of emissions and simplifying the regulatory framework.

Additionally, the findings in the *Outokumpu Oy*, and subsequent cases, have facilitated the conclusion of arrangements for intraday continuous trading across 10

¹³³⁸ Trine Krogh Boomsma and Kristin Linnerud, 'Market and policy risk under different renewable electricity support schemes' (2015) 89 *Energy*, 435

¹³³⁹ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

¹³⁴⁰ Carsten Bartholl and Markus Böhme, 'Corporate PPAs - A future financing model for renewable energies' [2018] Taylor Wessing

¹³⁴¹ Joined Cases C-145/06 and C-146/06 *Fendt Italiana Srl v Agenzia Dogane - Ufficio Dogane di Trento* ECLI:EU:C:2007:411, para 36; Case C-5/14 *Kernkraftwerke Lippe-Ems GmbH v Hauptzollamt Osnabrück* ECLI:EU:C:2015:354, para 45; Joined Cases C-43/13 and C-44/13 *Hauptzollamt Köln v Kronos Titan GmbH and Hauptzollamt Krefeld v Rhein-Ruhr Beschichtungs-Service GmbH*, ECLI:EU:C:2014:216, para 31 and 33; Case C-418/14 *ROZ-ŚWIT Zakład Produkcyjno-Handlowo-Usługowy Henryk Ciuirko, Adam Pawłowski spółka jawna v Dyrektor Izby Celnej we Wrocławiu*, ECLI:EU:C:2016:400, para 32; Case C-465/15 *Hüttenwerke Krupp Mannesmann GmbH v Hauptzollamt Duisburg*, ECLI:EU:C:2017:640, para 2

¹³⁴² Case C-31/17 *Cristal Union (legal successor) Sucrierie de Toury SA v Ministre de l'Économie et des Finances* ECLI:EU:C:2018:168

¹³⁴³ EC Directive 2003/96/EC 27 October 2003 'Taxation of Energy Products and Electricity' OJ L 283/51

EU countries¹³⁴⁴ from June 2018.¹³⁴⁵ The trading hub uses a shared order book,¹³⁴⁶ capacity management and single shipping model.¹³⁴⁷ It allows for 'buy orders' entered by market participants to be continuously matched with 'supply offers' is the same as any other bidding zone provided transmission capacity is available. The market simply focuses on the traded price of electricity and the costs of transport rather than having the complexity of being a fiscal system for tax collection as well.

3.5.6 Price Fixing – distortion of competition state aid - *PreussenElektra*¹³⁴⁸

PreussenElektra is a significant case in relation to the understanding of the conflicts between EU free trade principles and the renewable electricity legislative framework. The *PreussenElektra* case was decided prior to *Essent 1*,¹³⁴⁹ *Ålands Vindkraft*¹³⁵⁰ and *Green Network*¹³⁵¹ and contains free movement, price fixing and market distortion issues which can be considered state aid.

PreussenElektra is analysed here in relation to price fixing rather than free movement as it does not bring out different issues to those highlighted by the pure free movement cases discussed above. In many respects the free movement aspect of *PreussenElektra* is a simple application of the *ADBHU*¹³⁵² / *Danish Bottle*¹³⁵³ justification for an exception and thus not significant.

The use of state resources aspects of state aid contained in *PreussenElektra* are analysed in Section 3.5.9 below as they bring out an issue that is worthy of note

¹³⁴⁴ Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Latvia, Lithuania, Norway, The Netherlands, Portugal, Spain and Sweden. Most other European countries are due to take part in a second 'wave' go -live with XBID in Summer 2019 - https://www.epexspot.com/en/press-media/press/details/press/European_Cross-Border_Intraday_XBID_Solution_and_10_Local_Implementation_Projects_confirm_go-live_date_for_June_2018 accessed 30 May 2018

¹³⁴⁵ The delay from 1998 until 2016 to implement this kind of solution is in no small part a reflection of the need to put in place computing power to model ten country's transmission constraints in real time

¹³⁴⁶ An order book is an electronic list of buy and sell orders for a specific financial instrument, organised by price level. An order book lists the quantity of energy being bid or offered at each price point. - <https://www.investopedia.com/terms/o/order-book.asp> accessed 30 May 2018

¹³⁴⁷ All electricity flowing from one selling (or exporting point) to one consignee or intermediate consignee on the same transmission system is modelled in a single system

¹³⁴⁸ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹³⁴⁹ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektricititeits- en Gasmarkt* ECLI:EU:C:2014:2192

¹³⁵⁰ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹³⁵¹ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

¹³⁵² Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹³⁵³ Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

in comparison to the state aid cases of *Vent De Colère*,¹³⁵⁴ *Austrian Green Levy*¹³⁵⁵ and *Germans Green Levy*.¹³⁵⁶

PreussenElektra concerned German legislation¹³⁵⁷ setting out the 'feed-in tariff regime' for renewable generation. Electricity network operators were obliged, within certain limits, to purchase the renewable electricity produced in their franchise area and to pay for the electricity in accordance with a number of parameters.¹³⁵⁸ The minimum price paid to the renewable generators varied between 65% and 90% of the average sale price¹³⁵⁹ of electricity supplied to all final customers (renewables wind and solar were remunerated at 90% of the average sales price).¹³⁶⁰ As a consequence of the purchase obligation for renewable electricity the additional costs accruing to electricity network owners for renewable support schemes rose from DEM 5.8 million in 1991 to an estimated DEM 111.5 million in 1998.¹³⁶¹

The Commission had regarded the regime as acceptable and a form of compliant state aid, in view of the regime's relatively small impact (given the limited share of renewable energy compared to the overall electricity market – renewable electricity was circa 5% of the installed generation capacity at the time and due to the natural intermittency of renewables (no wind, no output) the volume compared to electricity distributed to end users was less).¹³⁶² However, in view of the increase in the market share of renewables, the Commission was in the process of reviewing this decision at the time of the referral to the CJEU.¹³⁶³

The supplier of electricity to end users, Schleswig,¹³⁶⁴ sourced almost its entire supply of electricity from *PreussenElektra*. From an original 0.77% in 1991,

¹³⁵⁴ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹³⁵⁵ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹³⁵⁶ Commission Decision 2015/1585, Aid Scheme SA 33995 –implemented by Germany for the support of renewable electricity and of energy-intensive users' available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹³⁵⁷ The Gesetz zur Sicherung des Einsatzes von Steinkohle in der Verstromung und zur Änderung des Atomgesetzes und des Stromeinspeisungsgesetzes (Law ensuring the supply of coal to power stations and amending the Law on Nuclear Energy and the Stromeinspeisungsgesetz) of 19 July 1994 (BGBl. 1994 I, p. 1618; 'the 1994 Law')

¹³⁵⁸ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160, para 3

¹³⁵⁹ The sale price to end users was composed of the costs of generation plus the costs of transmission and distribution and as such was considerably above the cost of generation. In 2015 the end user sales price in Germany was circa 13.89 €cents / kWh compared to a generation costs of 4.69 €cents/ kWh - Electricity Costs of Energy Intensive Industries An International Comparison [2015] for the German Ministry of Economic Affairs and Energy – available at <https://www.isi.fraunhofer.de/content/dam/isi/dokumente/ccx/2015/Electricity-Costs-of-Energy-Intensive-Industries.pdf> accessed 22 August 2018

¹³⁶⁰ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160, para 3(2) and 3(3)

¹³⁶¹ *Ibid*, para 20

¹³⁶² *Ibid*, para 11

¹³⁶³ *Ibid*

¹³⁶⁴ Schleswig is the electricity network operator in Schleswig-Holstein and Northern Lower Saxony region of Germany. They are one of the largest energy service providers in the north of Germany, offering municipal utilities (Stadtwerke) and other companies a wide range of connection and network services. See www.sh-netz.com/&prev=search accessed 22 August 2018; Peter Cameron, 'The Internal Energy Market – Redefining

the share of wind energy rose to 15% by 1998.¹³⁶⁵ The renewables support scheme¹³⁶⁶ contained a 'hardship clause' which allowed for excess costs to be reclaimed by the supplier (Schleswig) from the network owner (PreussenElektra). PreussenElektra, however, in declining the claim argued that the relevant part of the Act amounted to a change in the state aid regime, which had not been separately notified to the Commission.¹³⁶⁷ As the network operators were obliged to purchase renewable electricity produced within their franchise territory there is no doubt that intra EU trade was affected.¹³⁶⁸ However, the CJEU found these restrictions to be justified on two grounds (i) the aim of the regime being environmental protection,¹³⁶⁹ including the development of an environmentally conscious Internal Market¹³⁷⁰ (a straight *ADBHU*¹³⁷¹ / *Danish Bottle*¹³⁷² justification) and (ii) building on the finding in *Campus Oil*,¹³⁷³ there was limited cross-border interconnection at the time resulting in curtailment of an internal market in electricity.¹³⁷⁴

The Court also used the proposal, for what would become the 2001 Renewable Energy Directive¹³⁷⁵ where each member state would issue certificates of origin, capable of being the subject of mutual recognition, essentially making trade in renewable electricity both reliable and possible, as a justification for finding that the restriction of free movement and price enhancement proportionate.¹³⁷⁶

The *PreussenElektra* case is noteworthy in that the Court's evaluation of the national renewable support scheme granted Germany a wide margin of discretion in relation to the putting in place of a renewables support scheme which provided renewable facilities considerable revenue enhancement above the wholesale

Objectives' Peter Cameron and Raphael Heffron (eds) Legal Aspects of EU Energy Regulation (Oxford University Press, 2016), 13

¹³⁶⁵ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160, para 20

¹³⁶⁶ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹³⁶⁷ *Ibid*, para 30

¹³⁶⁸ *Ibid*, para 71

¹³⁶⁹ *Ibid*, para 75 and 81

¹³⁷⁰ *Ibid*, para 77

¹³⁷¹ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹³⁷² Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹³⁷³ Case C-72/83, *Campus Oil Limited v Minister for Industry and Energy*, ECLI:EU:C:1984:256, para 16

¹³⁷⁴ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160 para 75

¹³⁷⁵ EU Directive (2001/77/EC) 27 September 2001 'The promotion of electricity produced from renewable energy sources in the internal electricity market' OJ L 283/33

¹³⁷⁶ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160 para 81

market price determined via open price discovery¹³⁷⁷ trading methods. This kind of revenue support can therefore be considered as state aid in accordance with Article 107(1) as it favours one segment of the market over another. Hence the price support places the Renewable Energy in diagonal conflict with the state aid provisions of the Treaty (Article 107 TFEU). The CJEU, however, found the support scheme put in place to be proportionate in its support of the overriding objective of developing renewable electricity, again potentially applying the Dworkin constructive approach to interpretation looking at political or moral concerns, related to climate change.¹³⁷⁸

The case has effectively been used as the precedent for all the renewables support cases where revenue support mechanisms are an issue in the proceedings. It is also clear that in granting this discretion to member states in relation to the renewables support schemes,¹³⁷⁹ the CJEU has confirmed the competency that member states have over this aspect of the Renewable Energy Directive.

The Court went on to consider the structure of the feed-in tariff regime, the collection of the levy to fund it and its payment by a private body in relation to state aid, which will be discussed below in Section 3.5.9.

3.5.7 *Essent 1*¹³⁸⁰ Price Fixing and Thin Markets

The *Essent 1* case was discussed above in terms of the justifications used by the CJEU for finding in favour of the nationally focussed renewables support scheme which effectively excluded renewable facilities not in the target area – diagonal conflict with free movement.

In this section, that part of the justification for this derogation from the application of free movement which relates to the trading of the green certificates is analysed.

¹³⁷⁷ Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHG> accessed 30 March 2018

¹³⁷⁸ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

¹³⁷⁹ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹³⁸⁰ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

The CJEU, as part of its reasoning on free movement, stated that provided the market developed to trade the green certificates, which was at the heart of the Flemish renewables support scheme, allowed trading ‘under fair terms’¹³⁸¹ (although no real objective test as to how to determine the fairness of the terms was offered by the CJEU) the proportionality criteria was fulfilled. What the CJEU failed to consider was that the value of Flemish certificates was not subject to open normal price discovery¹³⁸² mechanisms present in traded markets, with the potential for such certificates to have an artificial price.¹³⁸³ This could be considered a market distorted by protectionism, with local renewable energy treated more favourably than that from out of region competitors. The market could be an attempt to control quantities (and indirectly prices) of renewable electricity therefore depriving ‘competition of its power’.¹³⁸⁴

The CJEU also failed to take account of the problem of information asymmetries where the Flemish vertically integrated utilities (generator and supplier functions being contained in one company) have an advantage over the other traders in the market, with the potential for opportunistic behaviour.¹³⁸⁵ Thus the potential for ‘thin’¹³⁸⁶ markets and the mispricing of trades is present with so few traders operating in the market.¹³⁸⁷

The *Essent* 1 renewables support scheme therefore also reveals a conflict between the trading of the green certificates, a mechanism set out in Article 3(2)(a) of the Renewable Energy Directive, and the provisions within Article 107(1) TFEU [state aid] which prohibits practices which distort competition. It reveals that the CJEU simply stating that traded markets must operate under fair terms does not automatically create a fully functioning market where price discovery and competitive practices are present. To ensure a fully functioning market the CJEU must look at the potential number of players in the market and the ability/willingness

¹³⁸¹ C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192, para 111

¹³⁸² Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHG> accessed 30 March 2018

¹³⁸³ J Krzeminska, ‘Are Support Schemes for Renewable Energies Compatible with Competition Objectives? An Assessment of National and Community Rules’ (2007) 7 Yearbook of European Environmental Law

¹³⁸⁴ Richard Bronk, ‘Hayek on the wisdom of prices: a reassessment’ (2013) 6(1) Erasmus Journal for Philosophy and Economics 82, 91

¹³⁸⁵ Richard Bronk, ‘Hayek on the wisdom of prices: a reassessment’ (2013) 6(1) Erasmus Journal for Philosophy and Economics, 82, 103

¹³⁸⁶ A thin market is a market with a low number of buyers and sellers. Since few transactions take place in a thin market, prices are often more volatile and assets are less liquid. The low number of bids and asks will also typically result in a larger spread between the two quotes. - <https://www.investopedia.com/terms/t/thinmarket.as> accessed 27 April 2018

¹³⁸⁷ George Akerlof, ‘The market for “lemons”: quality uncertainty and the market mechanism’ (1970) 84(3) The Quarterly Journal of Economics, 488

of these undertakings to participate in an efficient-market.¹³⁸⁸ In essence the CJEU must consider the economic operators within the market and the overall potential size of the market. Belgium itself is a small country with only 82GWh of electricity demand (for comparison Germany has 517GWh, France 442GWh and the UK 304GWh),¹³⁸⁹ therefore the market within the Flemish region would be even smaller. Hence, even without information asymmetries and the presence of vertically integrated utilities the market was going to attract few non-incumbent traders.

Should these criteria not be present the renewables support scheme is in diagonal conflict with Article 107(1) TFEU in relation to the potential fixing of prices which distorts competition.

3.5.8 Legitimate expectation, the right to regulate and State Aid

The 2008 financial crisis saw many EU countries experience deflation and reduced economic activity.¹³⁹⁰ One of the outcomes of the financial crisis was reduced demand for electricity which caused deficits and dispatch¹³⁹¹ issues in a series of electricity markets across the EU.¹³⁹² In the ensuing judicial and arbitral processes that followed the retrospective reductions in renewable electricity support schemes¹³⁹³ in certain member states, three issues were brought to the fore (i) state aid, (ii) legitimate expectation and (iii) the right of member states to regulate within their competency. What also became clear was that international investment law conflicted with EU law generally and EU environmental law specifically, challenging the legitimacy and utility of the investor-state arbitral system.¹³⁹⁴

¹³⁸⁸ Eugene Fama and Kenneth French, 'Size, value, and momentum in international stock returns' (2012) 105(3) *Journal of Financial Economics*, 457; See Also Zhe Lu, ZhaoYang Dong and Penelope Sanderson 'The Efficient Market Hypothesis and Electricity Market Efficiency Test' [2008] Third International Conference on Electric Utility Deregulation and Restructuring and Power Technologies, 436;

¹³⁸⁹ Electricity Consumption by EU member state https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Electricity_consumption_and_trade,_GWh,_2016_new.png

¹³⁹⁰ Murillo Campello, John Graham and Campbell Harvey, 'The real effects of financial constraints: Evidence from a financial crisis' (2010) 97(3) *Journal of Financial Economics*, 470

¹³⁹¹ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 *CIGRE*

¹³⁹² Germà Bel and Stephan Joseph, 'Emission abatement: Untangling the impacts of the EU ETS and the economic crisis' (2015) 49 *Energy Economics*, 531

¹³⁹³ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹³⁹⁴ Ahmad Ghouri *Interaction and conflict of treaties in investment arbitration* (Wolters Kluwer, 2015)

Two of the most prominent cases surrounding the change in renewable support frameworks were those from Spain¹³⁹⁵ and Italy,¹³⁹⁶ outlined below.

To reduce the deficit present in its electricity sector, in 2010 Spain reduced its feed-in tariff for grid scale photovoltaic solar installations (Royal Decree 14/2010). The reduction in feed-in tariff produced a series of adjudication cases focusing on legitimate expectation¹³⁹⁷ and investment protection via the Energy Charter Treaty 1994.¹³⁹⁸ These claims were made despite the finding in cases such as *Electrabel*¹³⁹⁹ that investors registered in the EU cannot rely on the Energy Charter Treaty. The finding of the Spanish arbitral court in *Charanne*¹⁴⁰⁰ was that the obligation to provide fair and equitable treatment to foreign investors¹⁴⁰¹ under the Energy Charter Treaty does not prevent a State from amending its national support scheme for renewables and therefore the member state retains at all times the right to regulate¹⁴⁰² and thus the competence over the details of the renewables support scheme put in place.

The interaction between the Energy Charter Treaty and EU law is an example of fragmentation (See Section 2.2) within international law,¹⁴⁰³ resulting from the proliferation of specialised commitments entered into by the EU. The dispute resolution tribunal in relation to the Energy Charter Treaty has no jurisdiction over the EU or member state regulatory commitments.¹⁴⁰⁴ In general the EU's

¹³⁹⁵ For an introduction to the electricity market in Spain see Iñigo del Guayo, 'Energy Law in Spain' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016); See Also Alberto Artés and Gonzalo Olivera, 'Renewable Energy in Spain' [2019] King & Wood Mallesons

¹³⁹⁶ For an introduction to the electricity market in Italy see Giuseppe Franco Ferrari, 'Energy Law in Italy' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

¹³⁹⁷ Case T-347/03 *Branco v Commission* ECLI:EU:T:2005:265, para 102

¹³⁹⁸ The Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-Treaty-1994/energy-charter-Treaty>; For an introduction to the Energy Charter Treaty see Graham Coop and Bernhard Maier, 'External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 66

¹³⁹⁹ *Electrabel SA v Hungary* ICSID Case No ARB/07/19; See also Kaj Hober, 'Investment Arbitration and the Energy Charter Treaty' (2010) 1(1) *Journal of International Dispute Settlement* 153, 155; See Also Anatole Boute, 'Energy Trade & Investment Law: International Limits to EU Energy Law & Policy' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

¹⁴⁰⁰ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L. v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf accessed 20 January 2017

¹⁴⁰¹ Daniel Behn, Ole Fauchald and Laura Letourneau-Tremblay 'Promoting Renewable Energy in the EU: Shifting trends in Member State policy space' (2017) 28(2) *European Business Law Review*, 217

¹⁴⁰² Graham Coop and Bernhard Maier 'The External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds.), *Legal Aspects of EU Energy Regulation*, (2nd ed, Oxford University Press, 2016), 80 provides a discussion of the right to regulate and investor protection contained in the EU-Canada Comprehensive Economic and Trade Agreement, the EU-Singapore Free Trade Agreement and the Transatlantic Trade and Investment Partnership

¹⁴⁰³ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

¹⁴⁰⁴ Gokce Mete and Ernesto Bonafé, 'Construction of Regional Energy Market Within a Multilateral Regulatory Framework: Escalated interactions between EU energy law and the Energy Charter Treaty' (2016) 9(3) *The Journal of World Energy Law & Business*

Courts and the arbitral tribunals can regard themselves as autonomous judicial bodies with an unwillingness to withdraw jurisdictional claims.¹⁴⁰⁵

The finding in *Charanne* is said to have been based on the fact that the reduction in profitability was only 10%. When the same issue was considered in *Eiser*,¹⁴⁰⁶ where the profitability reduction was in the range of 48% to 75%, the arbitral tribunal did find an infringement of Article 10(1) of the Energy Charter Treaty. Therefore, whilst the ‘right to regulate’ and member state competence seems clear, when it comes to compensation and judicial process at the practical level the quantum of reduction seems to be a factor in reaching a decision.

A similar situation occurred in Italy in 2011, when the referendum regarding new power in Italy resulted in a majority voting against the Government’s plans for nuclear power generation. This result further exacerbated Italy’s energy security issues, as it imports 12.5% of its total electricity consumption, totalling 45 TWh from neighbours including France, Switzerland and Slovenia making it the largest electricity importer in the EU after Denmark.¹⁴⁰⁷ Renewables therefore serve as an important source of domestic generation.¹⁴⁰⁸ As a result of the Italian economic crisis, Italian Law no. 116 (August 2014), reduced feed-in tariffs for renewables. In a test case, developer *Scat Puntì Vendita*¹⁴⁰⁹ sought redress via the Italian Constitutional Court claiming that the cuts were irrational and unforeseeable and hence Law 116 should be annulled. The reduction in the feed-in tariff was not annulled, however, a corporation tax accommodation was reached such that the profitability of Italian renewable projects has stayed broadly equal to pre-2014 levels.

What is really at stake in the two cases outlined is the competence¹⁴¹⁰ of the member states to develop, manage and administer renewables support schemes¹⁴¹¹

¹⁴⁰⁵ Daryl Mundis, ‘ICTY (Appeals Chamber): Prosecutor v. Delalić (Čelebići Case)’ (2001) 40(3) International Legal Materials, 626

¹⁴⁰⁶ *Eiser Infrastructure Limited and Energía Solar Luxembourg SARL v Kingdom of Spain*, ICSID Case No. ARB/13/36 available at <https://www.italaw.com/cases/5721> accessed 20 January 2017

¹⁴⁰⁷ Eurostat (2015). Eurostat data explorer - <http://ec.europa.eu/eurostat>. (accessed 15 May 2016)

¹⁴⁰⁸ Arjun Mahalingam and David Reiner, ‘Energy subsidies at times of economic crisis: A comparative study and scenario analysis of Italy and Spain’, (2016) EPRG Working Paper 1603, Cambridge Working Paper in Economics 1608 – 23 Jan 2016, www.eprg.group.cam.ac.uk (accessed 15 July 2016)

¹⁴⁰⁹ Decision 10/2015, *Scat Puntì Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

¹⁴¹⁰ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, ‘Competences in EU energy policy’ in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁴¹¹ ‘support scheme’ means ‘any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green

in accordance with the Renewable Energy Directive¹⁴¹² and if this competence has a limit such as ‘*fair and equitable treatment*’, and if there is a limit, has it substance at law.¹⁴¹³ Analysis of the TFEU does not indicate any means to fetter the member state competence to put in place renewable support schemes in accordance with the Renewable Energy Directive. In term of the Renewable Energy Directive, Directive Article 3(1) simply places an obligation on the member state to put in place a renewables support scheme in accordance with the national renewable action plan (developed in accordance with Directive Article 4). The Commission has a monitoring and reporting role to ensure the member state is on target (Directive Article 23), but the Directive makes it clear that this reporting and monitoring role does not affect the member state’s control over the national support scheme (Article 23(8)).

The only limit there seems to be on a member state’s control over their support schemes is in the need to achieve the national mandatory target for renewable capacity set out in the Renewable Energy Directive. Hence the member state must consider the affect any changes in the renewables support scheme will have on investor confidence and the ability that member states will have to attract investment going forward.¹⁴¹⁴

It is in the sphere of state aid that a potential solution lies in helping a member state to exit an expensive support scheme by having the Commission declare the scheme distortive of competition in contravention of Articles 107(1) TFEU [state aid].¹⁴¹⁵ Such action, however, must be seen as a high-risk strategy as during the empirical research respondents declared that retrospective changes in the renewables support scheme could make a country un-investable.

Another issue with this kind of case, is the possibility that any arbitral award will be declared state aid, as was the case in *Micula*.¹⁴¹⁶ The Commission held that the award was in effect state aid and ordered recovery of the arbitral

certificates, and direct price support schemes including feed-in tariffs and premium payments’ – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁴¹² Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹⁴¹³ Alexander Reuter ‘Retroactive Reduction of Support for Renewable Energy and Investment Treaty Protection from the Perspective of Shareholders and Lenders’ (2015) 13(3) Oil, Gas & Energy Law, 36

¹⁴¹⁴ Gus Van Harten, *Sovereign Choices and Sovereign Constraints: Judicial Restraint in Investment Treaty Arbitration* (Oxford University Press, 2013)

¹⁴¹⁵ Tim Maxian Rusche, *EU Renewable Electricity Law and Policy: From National Targets to a Common Market* (Cambridge University Press, 2015), 226; See Also See Also Daniel Pérez Rodríguez, ‘Electricity Generation and State Aid: Compatibility is the Question’ (2016) 15 European State Aid Law Quarterly, 207

¹⁴¹⁶ *Ioan Micula v Romania*, ICSID Case No. ARB/05/20 (<http://www.italaw.com/cases/697>); See Also Hanno Wehland ‘The Enforcement of Intra-EU BIT Awards: *Micula v Romania* and Beyond’ (2016) 17(6) Journal World Investment and Trade, 942 (2016)

compensation awarded.¹⁴¹⁷ Again this is a situation that has done nothing to give investors' confidence in the process and their ability to gain fair return on investment.

It should also be noted that the CJEU in 2018 has clarified in *Achmea*¹⁴¹⁸ that Articles 267 and 344 TFEU preclude the use of arbitral tribunals to determine issues within the jurisdiction of a bilateral investment Treaty between member states and have therefore brought the situation back to national courts and the CJEU as applicable.

As a result of the industry's concerns at the lack of any fair and equitable treatment conditions within the regulatory framework, the post 2020 Renewable Energy Directive in Article 6 states that support schemes may not be revised in a way that negatively impacts the rights conferred and the economics of renewable projects. Additionally, Article 15(3) of the revised Renewable Energy Directive states that to give investors sufficient predictability of planned changes to renewables support schemes, member states are to publish a 3 year look ahead.

These Directive Articles are far from perfect as they provide no criteria with which to assess negative impacts on projects of regulatory change and thus it is likely to take the CJEU to define the principles. Also, a 3 year look ahead is short compared to a typical renewable project's asset life of 30 to 40 years. Moreover, the drafting on the right to regulate and investor protection is seen to be much more explicit in the EU's trade and investment agreements.¹⁴¹⁹ But the revised Directive Articles are a start and an acknowledgment by policy makers that stability of the investment landscape is critical for the renewables developer community.

The last issue the *Charanne* and *Scat Puntí Vendita* cases illustrate is the reach of the *Ålands Vindkraft*¹⁴²⁰ case and the restriction in seeking a renewables support scheme in other EU countries which this case enforces. No application is known to have been made by the developers to other EU members states to be included within their renewable support frameworks. The *Ålands Vindkraft* case therefore simply extends its reach into renewable electricity support policies of the member states, which is contrary to the free movement rationale of EU free trade

¹⁴¹⁷ Commission Decision (EU) 2015/1470 of 30 March 2015, OJ L232/43 of 4 April 2015. Appeals against this decision are pending Cases T-624/15 *European Food v Commission*, T-694/15 *Micula v Commission* and T-704/15 *Micula v Commission*

¹⁴¹⁸ Case C-284/16 *Slowakische Republik v Achmea BV* ECLI:EU:C:2018:158, para 60; See Also Andrea Pinna 'The Incompatibility of Intra-EU BITs with European Union Law, Annotation Following ECJ, 6 March 2018, Case 284/16, Slovak Republic v Achmea BV' (2018) 1 Paris Journal of International Arbitration, 73

¹⁴¹⁹ Graham Coop and Bernhard Maier 'The External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds.), *Legal Aspects of EU Energy Regulation*, (2nd ed, Oxford University Press, 2016), 80 provides a discussion of the right to regulate and investor protection contained in the EU-Canada Comprehensive Economic and Trade Agreement, the EU-Singapore Free Trade Agreement and the Transatlantic Trade and Investment Partnership

¹⁴²⁰ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

principles, causing problems of regulatory uncertainty for the industry as it is not possible to diversify regulatory risk.

3.5.9 State Aid – state resources - *PreussenElektra*¹⁴²¹

The third area of conflict between the Renewable Energy Directive¹⁴²² and primary EU law concerns aid provided to renewable electricity facilities via state resources. With renewable electricity facilities generally receiving some form of revenue support, the potential for this support to be state aid is easily apparent. What the cases analysed show, is that the design of the renewables support scheme is key to it being declared compatible with the internal market¹⁴²³ and not found to be distortive and thus state aid.

The first situation analysed in relation to state aid is *PreussenElektra* where the CJEU considered the structure of the support scheme (a feed-in tariff regime), the collection of the levy to fund it and its payment by a private body. The Court confirmed that the finding of monies paid as prohibited state aid is a two stage cumulative process (i) aid granted by the State (even via statute only) and (ii) being granted through state resources.¹⁴²⁴ As the applicable Minister of State had refused to allow the increase in tariffs to end users,¹⁴²⁵ meaning that the network companies effectively funded the monies paid to the renewable generators, the AG¹⁴²⁶ opined and the Court¹⁴²⁷ held that no state resources were involved and thus the payments were not state aid.

The findings in *PreussenElektra* are significant for the renewables sector as following the case, the Commission issued several decisions where it recognised

¹⁴²¹ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹⁴²² Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹⁴²³ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹⁴²⁴ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160, para 58

¹⁴²⁵ *Ibid*, para 22

¹⁴²⁶ Opinion of Advocate General Jacobs Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2000:585, para 177

¹⁴²⁷ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160, para 60

the renewables support schemes¹⁴²⁸ in Holland,¹⁴²⁹ other parts of Germany¹⁴³⁰ and Denmark¹⁴³¹ as not constituting state aid and being proportionate. Based on the *PreussenElektra* process the Commission also determined that stranded costs in Spain,¹⁴³² Austria¹⁴³³ and Belgium¹⁴³⁴ were compatible with the internal market¹⁴³⁵ and not state aid.

The Commission also went on to decide a series of cases where the costs of funding the feed-in tariffs were met by electricity consumers.¹⁴³⁶ The Commission then progressed decisions related to tax rebates for certain technologies, which could not be considered part of the normal scheme of tax,¹⁴³⁷ but as relief from paying these taxes which resulted in a loss of State funds¹⁴³⁸ and found the rebates not to be state aid.

In conclusion the *PreussenElektra* case has significance for member states and their design of renewables support schemes, as well as the Commission in applying its lessons widely via its decisions in relation to renewables support.

The industry and member states took what they believed to be the lessons learnt from *PreussenElektra* and applied them to the design of other renewable

¹⁴²⁸ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁴²⁹ Commission Decision, state aid NN/30/B/2000 - The Netherlands, Zero tariff for green electricity, OJ C 30, 2 February 2002

¹⁴³⁰ Commission Decision, state aid NN 27/2000 - Germany, Act on granting priority to renewable energy sources, in force since 1 April 2000, OJ C 164, 10 July 2002; NN 68/2000 - Germany, Law on the protection of electricity generated from combined heat and power, OJ C 164, 10 July 2002

¹⁴³¹ In the context of the liberalisation of electricity markets, Article 24 of Directive 96/92/EC provided for the possibility of establishing transitional regimes to respect previous commitments or guarantees of operation given to operators before the entry into force of the Directive.

¹⁴³² Commission Decision, state aid NN 49/99 - Spain, 25 July 2001, SG (2001) D/290553

¹⁴³³ EU COM 2001, 'Commission gives Green light to "stranded costs" compensation by Spain, Austria and The Netherlands', Press Release, Brussels, 25 July 2001, IP/01/1 079

¹⁴³⁴ Commission Decision, state aid C 31/2000 - Belgium, Transitory Regime of the electricity market, OJ C 222, 18 Sept 2002

¹⁴³⁵ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹⁴³⁶ European Commission, state aid N 74/C/2002 - Finland, Aid to power plants, OJ C 148, 25 June 2003 (see also European Commission, Decision in state aid N 515/98); European Commission, state aid N 175a/2005 - Germany, Support of demonstration projects for use of energy from renewable sources, OJ C 89, 12 April 2006; European Commission, Decision of 24 April 2007 concerning state aid granted by Slovenia in the framework of its legislation concerning qualified energy producers, COM (2007) 1181 final; European Commission, state aid N 567/2007 - Denmark, Modification of electricity production grant, Brussels, 21 December 2007, K (2007) 6876

¹⁴³⁷ European Commission, state aid NN/30/B/2000 - The Netherlands, Zero tariff for green electricity, OJ C 30, 2 February 2002 - As it would be the case of renewables not paying a carbon emissions tax, due to the fact that they do not deliver those emission to the atmosphere

¹⁴³⁸ For example: European Commission, state aid N 239/2001 The Netherlands, Partial Exemption of the energy tax for waste incineration units, OJ C 32, 5 February 2002; European Commission, state aid N 56/2006 - United Kingdom, climate change levy rebate extension, Brussels, 4 April 2006, C (2006) 1536; European Commission, state aid N 907/2006 - Hungary, Aid to Mitrai Eromu Zrt - MSF 2002, Brussels, 10 July 2007, C(2007)3254 final; European Commission, state aid N391/2006 - Denmark, Tax rate reductions: heat produced in CHPs, heat produced by electricity and process heat, Brussels, 9 November 2007, C (2007) 5520; European Commission, state aid N394/2007 - Denmark, non-appliance to wind power plants of lower depreciation rate, Brussels, 13 March 2008, C(2008)1083

electricity support schemes. Three resulting cases are analysed below showing *PreussenElektra* is far from a situation applicable for general application but is a special case.

3.5.10 French¹⁴³⁹ Renewables & the State Management of Funds - *Vent De Colère*¹⁴⁴⁰

Following the CJEU's finding in *PreussenElektra*,¹⁴⁴¹ the French Government in 2008 enacted a regime to support on-shore wind renewable generation. The *Vent De Colère* case which resulted from the renewables support scheme¹⁴⁴² highlights how design of the scheme is critical to the findings of state aid and looks very squarely at the issues of state control.

The French law empowered the appropriate ministers to lay down the tariffs for the purchase of renewable electricity.¹⁴⁴³ The renewables support scheme allowed compensation for the additional costs imposed on the distributors of electricity generated by wind power due to their obligation to purchase such electricity at a price higher than the market price. The mechanism provided that distribution companies could claim full compensation for the additional costs (considered as costs derived from public service obligations) from the Caisse des Depots Group (the 'CDC'), a public body put in place to administer certain activities relating to economic development. The payments made by the CDC were ultimately financed by electricity consumers, via their electricity bills. The method of calculating the tariff was set out by ministerial orders after consulting the Commission de Regulation de l'Energie ('CRE'), the French energy regulator.

Advocate General Jääskinen started his analysis by focusing on the control exercised by the State and the nature of the resources in question. The AG stated that case law has passed from an institutional approach to an attribution approach,

¹⁴³⁹ For an introduction to the French electricity market see Mathias Dantin, Christophe Lefort, Thomas Herman and Raphaëlle Buot de L'Epine, 'France' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016); See Also Thierry Lauriol, 'Energy Law in France' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

¹⁴⁴⁰ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹⁴⁴¹ Case C-379/98 *PreussenElektra AG v Schlesweg AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein ECLI:EU:C:2001:160

¹⁴⁴² 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁴⁴³ Adrien Giraud, 'Vents De Colère! – Testing the Limits of PreussenElektra' (2014) 13(2) *European state aid Law Quarterly* 345, 345

such that consideration must be given to the fact that the measure in question was adopted by a public undertaking.¹⁴⁴⁴ However, it is not necessary to apply the test relating to state control if the public authorities form a constituent part of the State itself.¹⁴⁴⁵ Accordingly, as long as the resources continuously remain under public control, and are thus available to public authorities, this is sufficient for them to fall within the scope of Article 107(1) TFEU. This is the situation found in the *Vent De Colère* case, where (i) the amount of the levy is determined annually by ministerial decree upon a proposal of the CRE,¹⁴⁴⁶ (ii) the funds are collected and administered by the CDC, using a balancing account,¹⁴⁴⁷ and (iii) the CDC pays the relevant operators the balancing amount four times a year.¹⁴⁴⁸

As the balancing monies pass through a body established by statute and authorised by the State to undertake the collection and distribution functions, the AG considered the CDC a public establishment ‘par excellence’¹⁴⁴⁹ and the monies in question were left at the disposal of national authorities, hence there was no need for an in-depth analysis of the functions of the CDC.¹⁴⁵⁰

The AG distinguished the payment mechanism put in place by the statute and the mechanism assessed in *Pearle*. The AG pointed out that, in *Pearle*,¹⁴⁵¹ the public-law body served only as a vehicle for levying and allocating resources collected for a purely commercial objective previously determined by industrial operators and did not take part in the decision-making process as to the amounts to be recovered and paid to industry players.¹⁴⁵²

The AG disagreed with a general assertion that the public nature of a body means that the resources available to it must be categorised as state resources.¹⁴⁵³ He considered, however, that the function of the CDC (a public law body) in the collection and payment of the monies necessary to fund the feed-in tariff meant that they were resources within the control and disposition of a public body.¹⁴⁵⁴

¹⁴⁴⁴ Case C-305/89 *Italy v Commission* ECLI:EU:C:1991:142, para. 14.

¹⁴⁴⁵ AG Jääskinen Opinion - Case C-262/12, *Association Vent De Colère! Fédération nationale and Others v Ministre de l'Écologie, du Développement durable, des Transports et du Logement and Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:469, Para 31.

¹⁴⁴⁶ *Ibid*, para 10

¹⁴⁴⁷ *Ibid*, para 10

¹⁴⁴⁸ *Ibid*, para 11

¹⁴⁴⁹ *Ibid*, para 41 & 44

¹⁴⁵⁰ *Ibid*, para 44

¹⁴⁵¹ Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfsschap Ambachten* ECLI:EU:C:2004:448, concerning the finding of an advertising campaign decided upon by the members of a professional organisation

¹⁴⁵² AG Jääskinen Opinion - Case C-262/12, *Association Vent De Colère! Fédération nationale and Others v Ministre de l'Écologie, du Développement durable, des Transports et du Logement and Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:469, para 45

¹⁴⁵³ *Ibid*, para 46

¹⁴⁵⁴ *Ibid*, para 47

The AG concluded that the mechanism established falls within the scope of Article 107(1) TFEU and is thus state aid. The AG stating the primary factor in reaching this conclusion was that the '*burden of financing the obligation to purchase electricity from wind power at a price higher than the market price applies to all consumers of electricity in France, irrespective of whether they purchase green energy or not*'.¹⁴⁵⁵

The French Government pointed out, along the lines of *PreussenElektra*, that the obligation to purchase did not have any impact on the State budget. It was merely a way to recover the additional costs borne by the organisations within the electricity market. Additionally, it was stated that the use of a public-law entity, the CDC, to collect and distribute monies associated with the market mechanism was only due to practical considerations relating to the number of undertakings with a purchase obligation.¹⁴⁵⁶ The AG, in finding little merit in this assertion, pointed out that the form of the charge ruled it out of being categorised as being controlled by 'private operators'.¹⁴⁵⁷

The French Government had also sought to time limit the effects of the judgement, should the CJEU find that the mechanism was in fact state aid. Again, the AG found little merit in this, stating that the application could not succeed in view of the scope of the issues referred focusing simply on the concept of state aid.¹⁴⁵⁸ Therefore the AG found that the scheme was state aid.

The judgement from the CJEU followed the opinion of the AG and confirmed that the French support for renewable electricity was funded by State resources and hence state aid (Article 107(1) TFEU).¹⁴⁵⁹ The Court confirmed that to classify advantages as state aid, they must be attributable to the state and be granted directly or indirectly through state resources.¹⁴⁶⁰ In considering the criteria that the payment regime must be attributable to the state, the Court referred to *France v Commission*,¹⁴⁶¹ which held that a member state cannot circumvent the rules regarding state aid by simply creating an autonomous undertaking to administer collections and payments.¹⁴⁶² The Court therefore considered public authorities had

¹⁴⁵⁵ Ibid, para 50

¹⁴⁵⁶ Ibid, para 56

¹⁴⁵⁷ Ibid, para 54

¹⁴⁵⁸ Ibid, para 60

¹⁴⁵⁹ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851 para. 45

¹⁴⁶⁰ Ibid, para 16

¹⁴⁶¹ Case C-482/99, *France v Commission*, ECLI:EU:C:2002:294, para 23

¹⁴⁶² Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851 para 34

been involved in the adoption of the framework in question and that organs of the state were involved in the administration and control of the payments as a result of, (i) the offset mechanism being established by law, (ii) the applicable Minister providing an annual ruling regarding a cap on payments,¹⁴⁶³ (iii) the energy regulator, another government body, overseeing the day to day activities of the settlement organisation,¹⁴⁶⁴ (iv) the CDC being seen as '*an intermediary in the management of those funds*',¹⁴⁶⁵ (v) CDC's general manager being appointed by the President of France with the Council of Ministers acting as its Supervisory Board and that its supervising committees were composed of persons appointed by the French Chamber of Deputies, its Senate and other public institutions.¹⁴⁶⁶ The Court also noted that the French State provided a payment/credit guarantee, requiring the State to discharge past debts and to cover in full the additional costs imposed on the companies should the charges collected be insufficient to cover those additional costs.¹⁴⁶⁷

Vent De Colère's epilogue can be found in *Elcogas*,¹⁴⁶⁸ relating to a Spanish special funding regime for a power station which generated electricity by the gasification of coal and other fuels. The Court analysed the elements of the funding regime associated with the additional costs of generation. As in *Vent De Colère*, analysis focussed on the funding being conferred using State resources, with compatibility not being considered. The Court again held (i) the funding level for Elcogas was set by Ministerial Order concerning the '*permanent costs of the system*',¹⁴⁶⁹ (ii) the mechanism was financed through the electricity bills of all consumers¹⁴⁷⁰ and (iii) payments were made by the Comision Nacional de la Energia, with no discretionary powers in their administration.¹⁴⁷¹ Hence, the measure constituted state aid,¹⁴⁷² with the fact that the measure was financed by electricity consumers in general, and not a specific tax, not altering the finding.¹⁴⁷³

The significant finding of the Court in *Vent De Colère*, was that as a state entity had control of the funding at all material times, this is a distinct contrast to the funding scheme in *PreussenElektra* (See Section 3.5.9) where the funds were

¹⁴⁶³ Ibid, para 23

¹⁴⁶⁴ Ibid, para 30

¹⁴⁶⁵ Ibid, para 28

¹⁴⁶⁶ Ibid, para 29

¹⁴⁶⁷ Ibid, para 27

¹⁴⁶⁸ Case C-275/13 *Elcogas S.A. v Administracion del Estado* ECLI:EU:C:2014:2314

¹⁴⁶⁹ Ibid, para 27

¹⁴⁷⁰ Ibid, para 28

¹⁴⁷¹ Ibid, para 29

¹⁴⁷² Ibid, para 30

¹⁴⁷³ Ibid, para 31

managed by private companies and the state had no control at any time.¹⁴⁷⁴ The case is a lesson that the design of the renewables support scheme is key to it being found compatible with Article 107 TFEU and not state aid.

The case clearly shows, as did *PreussenElektra*, that provided a renewables support scheme is designed correctly without the state control of the funds, that revenue support for renewable electricity can be allowed by the CJEU on the grounds of environmental protection being an overriding objective.¹⁴⁷⁵ It was not the level of support provided to renewables that was at issue but the level of state control.

3.5.11 Austria¹⁴⁷⁶ - Intensive Energy Users & Exemption from *Austrian Green Levy*¹⁴⁷⁷

The case of *Austrian Green Levy* is another example of a case showing that renewable support scheme¹⁴⁷⁸ design is critical to the compatibility of the scheme with the provisions against state aid (Article 107 TFEU). The CJEU in *PreussenElektra*¹⁴⁷⁹ showed that a renewables support scheme could be compatible with state aid provided it was designed and operated correctly. The *Vent De Colère*¹⁴⁸⁰ case showed that seeking to manage a renewable support scheme via government-controlled entities was not an appropriate design to allow a finding of compatibility with state aid for the support scheme. The *Austrian Green Levy* case looks at a different aspect of support scheme design, namely the conferral of a differential advantage due to the exemption of certain users from paying the applicable green levy to support the payments made to renewable electricity facilities via the support scheme.

¹⁴⁷⁴ Ibid, para 32

¹⁴⁷⁵ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁴⁷⁶ For an introduction to the Austrian electricity market see Thomas Starlinger 'Austria' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

¹⁴⁷⁷ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁴⁷⁸ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁴⁷⁹ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹⁴⁸⁰ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

The Commission within Decision SA.26036,¹⁴⁸¹ relating to the Austrian Green Electricity Act (2009) (GEA 2009), raised doubts in relation to the compatibility of the mechanisms put in place by the Act and the internal market.¹⁴⁸² The Commission subsequently publish Decision SA. 33384,¹⁴⁸³ declaring incompatible with the internal market, several mechanisms set out within the Austrian Green Electricity Act (2012) (GEA 2012).

The GEA 2009 and 2012, were designed to support the production of renewable electricity via a feed-in tariff, which is financed by the Austrian electricity consumers through a clearance or settlement mechanism. The funding of the support mechanism is based on two pillars: (i) a fixed transfer price is to be paid by the electricity traders on the (mandatory) purchase of green electricity and (ii) a fixed lump sum paid by Austrian electricity consumers depending on the grid level to which they are connected.

In accordance with that Act, the guaranteed fixed price, which is higher than the market price of electricity, is fixed each year by the Austrian Minister for the Economy and Employment.¹⁴⁸⁴

The Austrian GEA 2009 contains a provision that intends to exempt companies in energy intensive industries from the obligation to purchase green electricity, if expenses for green electricity are larger than 0.5 % of their respective production costs.¹⁴⁸⁵ The Commission expressed doubts as to the compatibility of this exemption with the rules on state aid, and as such expressed in its decision that Austria should recover the state aid given and amend its GEA 2009. The Austrian Government rejected the Commission's decision and made referral to the CJEU.¹⁴⁸⁶

As part of its consideration of the renewables support scheme the Court held that two aspects of GEA 2009 were significant, firstly that any undertaking could be exempted from paying the levy if an application to the Austrian energy regulator is successful (Article 22(c)(5) of the GEA 2009),¹⁴⁸⁷ and secondly that any energy-intensive business which has been granted an exemption from the purchase obligation is required to pay directly to the Government controlled settlement

¹⁴⁸¹ Commission Decision (2008) SA.26036 Aid to energy intensive businesses, Green Electricity Act (Ökostromgesetznovelle 2008)

¹⁴⁸² Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹⁴⁸³ Commission Decision (2013) state aid SA.33384 Green Electricity Act 2012, Austria

¹⁴⁸⁴ subsequently the Austrian Federal Minister for the Economy, the Family and Young Persons and then the Austrian Federal Minister for Science, Research and the Economy

¹⁴⁸⁵ The Green Electricity Act (Ökostromgesetz 2009; Federal Gazette No. 114/2008) - Para 22c (5)

¹⁴⁸⁶ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁴⁸⁷ Ibid, para 37

organisation (ÖMAG),¹⁴⁸⁸ and not to the electricity suppliers, a ‘*compensatory amount*’.¹⁴⁸⁹

The Court went on to declare the levy as a ‘*para-fiscal levy*’ on electricity in Austria, which is set by a public authority.¹⁴⁹⁰ Additionally, the Court held that, despite the state owning less than 50% of the shares in ÖMAG, this was not sufficient to prevent a finding of state control and that state resources were present in the context of the GEA 2009.¹⁴⁹¹

The Court held that the funds were administered as ‘special resources’,¹⁴⁹² the use of which was for strictly defined purposes by the Austrian legislature and thus the same type of funds as had been held to be state resources in *Ladbroke Racing v Commission*.¹⁴⁹³ As the mechanism of aid for renewable electricity, and the mechanism of the exemption for energy-intensive businesses, was established by law, it must therefore be regarded as being attributable to the state.¹⁴⁹⁴

The Court stated that in accordance with the judgement in *British Aggregates v Commission*,¹⁴⁹⁵ it was not for member states to freely decide which undertakings were to pay the green levy, as the exemption was a form of selective advantage and thus state aid.¹⁴⁹⁶

As was the situation in *Vent De Colère*,¹⁴⁹⁷ the case confirmed that the CJEU is prioritising the development of renewable electricity over the provisions of EU law (again free movement and state aid). The case is however, a further lesson that the design of the renewables support scheme is key to it being found compatible with Article 107 TFEU and not state aid.

¹⁴⁸⁸ The ÖMAG was set up by the Austrian Government in 2006 with the express purpose of undertaking the settlement function with regards to the green levy and the organisation was considered a state concession - Ibid, para 67

¹⁴⁸⁹ Ibid, para 38

¹⁴⁹⁰ Ibid, para 68

¹⁴⁹¹ Ibid, para 69

¹⁴⁹² Ibid, para 71

¹⁴⁹³ Case T-67/94 *Ladbrook Racing v Commission*, ECLI:EU:T:1998:7, para 105

¹⁴⁹⁴ Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060- para 87

¹⁴⁹⁵ C-487/06, *British Aggregates Association v Commission and United Kingdom* ECLI:EU:C:2008:757, para 86

¹⁴⁹⁶ Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060- para 118

¹⁴⁹⁷ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

3.5.12 German¹⁴⁹⁸ Intensive Energy Users & Exemption from *Green Levy*¹⁴⁹⁹

The case of German Green Levy is the third in a line of state aid cases in the post *PreussenElektra*¹⁵⁰⁰ era where in a similar manner to that in the *Austrian Green Levy*¹⁵⁰¹ case the German State sought to exempt certain of its intensive energy users from the requirement to pay the levy on electricity supplied to end users used to fund the renewables support scheme.¹⁵⁰²

The promotion of renewable electricity has been one of the cornerstones of German energy policy since the 1980s.¹⁵⁰³ However, the increase in the use of renewable electricity has not been universally welcomed due to its impact on the economy and cost structure of intensive energy users.¹⁵⁰⁴

Since *PreussenElektra*¹⁵⁰⁵ (See Section 3.5.9) German Renewable Energy law has undergone a number of changes, with the entry into force of the Renewable Energy Sources Act 2012 (Erneuerbare Energien Gesetz – ‘EEG’).

As outlined above, resulting from lobbying, the Commission published state aid guidelines¹⁵⁰⁶ allowing the exemption of certain industry sectors from the payment of the carbon price. The content of the Commission’s state aid guidelines is thought to have contributed to the belief within Germany that it could go further in its renewable energy regulations and exempt intensive energy users from paying the green levy.¹⁵⁰⁷

¹⁴⁹⁸ For an introduction to the German electricity market see Kai Pritzsche and Sebastian Pooschke, ‘Germany’ in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016); See Also Johann-Christian Pielow and Hans-Martin Koopmann, ‘Energy Law in Germany’ in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

¹⁴⁹⁹ Commission Decision 2015/1585, Aid Scheme SA 33995 – ‘implemented by Germany for the support of renewable electricity and of energy-intensive users’, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁵⁰⁰ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein ECLI:EU:C:2001:160

¹⁵⁰¹ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁵⁰² ‘support scheme’ means ‘any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments’ – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁵⁰³ Staffan Jacobsson and Volkmar Lauber, ‘The politics and policy of energy system transformation – explaining the German diffusion of renewable energy technology’ (2006) 34(3) *Energy Policy*, 256, 256 – use of Enquete Commission to define energy policy

¹⁵⁰⁴ Andreas Haak and Michael Brüggemann, ‘Compatibility of Germany’s Renewable Energy Support Scheme with European state aid Law – Recent Developments and Political Background’ (2016), 15(1) *European State Aid Law Quarterly*, 91

¹⁵⁰⁵ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein

¹⁵⁰⁶ EU Commission Communication C158/4, ‘Guidelines on Certain state aid Measures in the Context of the Carbon Emission Allowance Trading Scheme Post 2012’ 5 June 2012

¹⁵⁰⁷ Christian Rammer, Sandra Gottschalk, Michael Peneder, Martin Wörter, Tobias Stucki and Spyros Arvanitis, ‘Does energy policy hurt international competitiveness of firms? A comparative study for Germany, Switzerland and Austria’ (2017) 109 *Energy Policy* 154; See Also Ortwin Renn and Jonathan Marshall, ‘Coal, nuclear and renewable energy policies in Germany: From the 1950s to the “Energiewende”’ (2016) 99 *Energy Policy* 224;

The EEG 2012 regime is a complex mechanism providing a renewable electricity support scheme. The Act requires all network operators to connect renewable generating capacity to their networks,¹⁵⁰⁸ to transmit this electricity as a priority¹⁵⁰⁹ and to make renewable generators support payments as set out in the EEG 2012¹⁵¹⁰ - generally a premium above the market price for electricity. In essence, the distribution network operators sell the renewable electricity to the regional transmission system operator,¹⁵¹¹ receiving a payment equivalent to the sum paid to renewable generators.¹⁵¹² The transmission operators sell the renewable electricity on the power exchange and if the price recovered for the renewable electricity is not equal to that paid to the distribution company, the transmission operator is able to recover the applicable amount from suppliers (via final customer's tariffs – the so called 'EEG Surcharge').¹⁵¹³ Suppliers may receive a reduced EEG Surcharge (the 'Green Electricity Privilege') if they can show that at least 50% of the electricity the supplier sells is from renewables and that at least 20% of this is from wind or solar.¹⁵¹⁴

Each year the Federal Office for Economic Affairs & Export Control sets a cap for the EEG Surcharge that may be passed on to 'electricity intensive users' and railways,¹⁵¹⁵ with the reduction levied on electricity intensive users and railways passed on to domestic consumers.¹⁵¹⁶ The regime is subject to information publication and transparency provisions between the industry players and the industry regulator – Bundesnetzagentur (Federal Network Agency – 'BNetA'), with the BNetA having a supervisory role as set out in the EEG 2012.¹⁵¹⁷

As a result of a complaint by the German Association of Energy Consumers to the Commission that EEG 2012 was state aid and incompatible with the internal market,¹⁵¹⁸ the Commission undertook a two-stage investigation, finally reporting in 2014.¹⁵¹⁹

Bernice Lee, 'Managing the Interlocking Climate and Resource Challenges' (2009) 85(6) *International Affairs* 1101, 1111; See also M Kanellakis, G Martinopoulos and T Zachariadis, 'European Energy Policy – A Review' (2013) 62(c) *European Energy Policy*, 1020, 1029

¹⁵⁰⁸ Erneuerbare Energien Gesetz – "EEG 2012" para 5-7

¹⁵⁰⁹ Ibid para 8-12

¹⁵¹⁰ Ibid para 16-33

¹⁵¹¹ Ibid para 34

¹⁵¹² Ibid para 35

¹⁵¹³ Ibid para 37

¹⁵¹⁴ Ibid para 39

¹⁵¹⁵ Ibid para 40

¹⁵¹⁶ Ibid para 50

¹⁵¹⁷ Ibid para 61

¹⁵¹⁸ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹⁵¹⁹ Commission Decision 2015/1585, on the aid scheme SA.33995 (2013/C - ex 2013/NN) implemented by Germany for the support of renewable electricity and of energy-intensive users, C(2014) 8786 final

Following the publication of the Commission's Decision, Germany brought an action *Germany v Commission*¹⁵²⁰ (German Green Levy). The case set out by Germany was that there was an absence of selective economic advantage, because the support for renewable electricity meets the criteria in *Altmark*,¹⁵²¹ namely that the reductions for energy-intensive users merely sought to mitigate existing fiscal¹⁵²² and structural disadvantages to German industry.¹⁵²³

Moreover there was an absence of State resources and State control, due to the incomparability of the legal and factual situation in the EEG-Act 2012 with the situations examined by the Court in cases *Vent de Colère*¹⁵²⁴ and *Austrian Green Levy*.¹⁵²⁵ Additionally, it was stated that if the reduction to intensive energy users constitute state aid at all, the EEG-Act 2012 constituted existing aid in the light of the Commission's decision on state aid declaring the previous German Renewable Act to be compatible with the state aid rules and thus any aid granted was compatible with the internal market¹⁵²⁶ on the basis of Article 107(3)(b)TFEU (remedy of economic disturbance) and 107(3)(c)TFEU (the aid does not adversely affect trading).¹⁵²⁷ Germany further claimed that the scheme should be allowed on the 'ability to pay' principle, whereby the energy intensive users would remain in Germany and contribute to some extent to the funding of renewable electricity production.¹⁵²⁸ Germany lastly claimed that the flow of funds relating to the renewable scheme did not become, directly or indirectly, state funds and that the oversight of the BNetzA was merely to prevent an infringement of the regulations by one of the operators in the supply chain.¹⁵²⁹

In considering the issues the Court looked at the compatibility of the structure of EEG 2012 with the four criteria set out in *Pearle*.¹⁵³⁰

The Court held that the state did intervene in the market and that the level of monies and the flow of the renewable surcharge were controlled by the State.¹⁵³¹

The Court also considered the reduction in EEG 2012 surcharge was a deferential and distortive benefit received by the energy intensive users.¹⁵³² The

¹⁵²⁰ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281

¹⁵²¹ Case 280/00, *Altmark Trans* ECLI:EU:C:2008:413

¹⁵²² Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 46 to 48

¹⁵²³ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 58

¹⁵²⁴ Case 262/12, *Associated Vent de Colère* ECLI:EU:C:2013:851

¹⁵²⁵ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁵²⁶ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹⁵²⁷ *Ibid*, para 62

¹⁵²⁸ *Ibid* para 66

¹⁵²⁹ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 77

¹⁵³⁰ Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfschap Ambachten* ECLI:EU:C:2004:448 para 33 - an intervention by the State, through State resources, affect trade between member states, conferring an advantage on the recipient, distorts, or threaten to distort, competition

¹⁵³¹ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 41

¹⁵³² *Ibid*, para 112

Court used the criteria set out in *British Aggregates v Commission*¹⁵³³ whereby holding that the reduction in the surcharge was similar in nature to a subsidy and as such has the same effect and therefore is a form of state aid incompatible with Article 107 TFEU.¹⁵³⁴ The Court held that the EEG 2012 sought to compensate for a perceived competitive disadvantage, and was consistent with the finding in *Heiser v Finanzamt Innsbruck*,¹⁵³⁵ that should a measure favour an undertaking by conferring an economic advantage¹⁵³⁶ it is state aid. The Court also maintained that the important issue was the effect of the measures in question and as such it was state aid (*Comitato v Commission*).¹⁵³⁷

The Court stated that the measures put in place by EEG 2012, did not constitute a service of general economic interest¹⁵³⁸ and as such could not be held to be exempt from being prohibited as state aid (*Altmark*¹⁵³⁹ and *Orange v Commission*),¹⁵⁴⁰ thus the EEG 2012 support scheme is state aid.¹⁵⁴¹

The Court dismissed any assertion that the support scheme should be allowed on an ability to pay principle¹⁵⁴² based on the previous findings in *Commission & Spain v Gibraltar & UK*¹⁵⁴³ where such considerations in relation to state aid were held to be invalid.¹⁵⁴⁴

The Court held in relation to the flow of funds, that case law set out that state aid was not only derived from funds provided by the State but was also aid granted through state resources.¹⁵⁴⁵ The surcharge put in place by EEG 2012 remained at all material times under the dominant influence of public authorities, in that the electricity network operators were administering a state concession,¹⁵⁴⁶ the Court

¹⁵³³ Case T-210/02, *British Aggregates v Commission*, ECLI:EU:T:2012:110, para 46

¹⁵³⁴ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 49

¹⁵³⁵ Case C-172/03, *Heiser v Finanzamt Innsbruck*, ECLI:EU:C:2005:130 para 54

¹⁵³⁶ Case C-399/08, *Commission v Deutsche Post*, ECLI:EU:C:2010:481, para 40

¹⁵³⁷ Case C-71/09, *Comitato 'Venezia vuole vivere' v Commission*, ECLI:C:2011:368 para 94

¹⁵³⁸ Services of general economic interest are economic activities that public authorities identify as being of particular importance to citizens and that would not be supplied (or would be supplied under different conditions) if there were no public intervention - examples being transport networks, postal services and social services - EU Communication 2012/C 8/02, 'State aid rules to compensation granted for the provision of services of general economic interest' OJ C8/4; See Also EU Communication 'Services of General Interest In Europe' OJ 2001 C17 – this was confirmed in April 2018 via Case C-91/17 *Cellnex Telecom v Commission* ECLI:EU:C:2018:284 – where it was held that (i) state intervention is justified only when there is market failure, meaning that before a public service obligation (PSO) is imposed, the market failure must be demonstrated with objective evidence, (ii) A PSO must be clearly defined, (iii) one or more undertakings must be made responsible, by law or through contract, to supply the service, and (iv) the selection of the supplier(s) and well as their compensation must be determined according to the procedures laid down in the 2012 Services of General Economic Interest EU Framework; See Also Giulio Napolitano, 'Towards a European Legal Order for Services of General Economic Interest' (2005) 11(4) European. Public Law, 565

¹⁵³⁹ Case C280/00, *Altmark Trans GmbH and Regierungspräsidium Magdeburg v Nahverkehrsgesellschaft Altmark GmbH, and Oberbundesanwalt beim Bundesverwaltungsgericht* ECLI:EC:C:2003:415

¹⁵⁴⁰ Case T-385/12 *Orange v Commission*, ECLI:EU:T:2015:117, para 43

¹⁵⁴¹ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 64

¹⁵⁴² Ibid para 68

¹⁵⁴³ Case C-106/09 *Commission & Spain v Gibraltar & UK*, ECLI:EU:C:2011:732 para 146

¹⁵⁴⁴ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 68

¹⁵⁴⁵ Case C-482/99, *France v Commission*, EU:C:2002:294 para 23

¹⁵⁴⁶ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 94

using the judgements in *Essent Netwerk Noord*¹⁵⁴⁷ and *Austrian Green Levy*¹⁵⁴⁸ to justify its position. The Court therefore held that the network operators in collecting, holding separately from general funds and distributing as directed by EEG 2012 and with the oversight of the BNetzA and other Governmental Ministries, means that the mechanism set up by EEG 2012 was state resources,¹⁵⁴⁹ the court again using the judgement in *Ladbroke Racing v Commission*,¹⁵⁵⁰ where the facts were similar. Therefore, the reduction in surcharge to energy intensive users was held to be state aid to those consumers and that such users were required to make good the reduction enjoyed.¹⁵⁵¹

It seems clear that the German authorities believed the relationship between environmental goals and industrial competitiveness to be a struggle between environmental benefits and industrial costs, whereas it has been stated¹⁵⁵² that well framed environmental regulation would drive innovation and in a changing social and environmental paradigm the benefits/cost balance would not be static overtime.

The German legislator, however, failed to take account of the position reached in *R v MAFF ex parte Hedley Lomas*,¹⁵⁵³ where it was held that a member state putting in place laws to redress a perceived economic imbalance or unfair practice of another member state, was prohibited and that the proper route for such redress should be through the European Court. This line of judicial reasoning, equally ignored by the German legislator, seems to have been following in a series of cases from the late 1990s where the granting of operating aid intended to maintain a fiscal position was held to be state aid and prohibited by Article 107(3)(c).¹⁵⁵⁴

As a result of the CJEU finding the German authorities imposed the EEG surcharge on all consumers procuring their electricity from the grid. Electricity generated by self-suppliers (usually generation embedded within a factory or other such facility for self-supply) was exempt from this surcharge. This exemption under German law for self-suppliers of electricity is said to have created an artificial 'boom' in self-supply, with many companies switching to self-supply to avoid the EEG-surcharge. This undermined the financial sustainability of public support for

¹⁵⁴⁷ Case C-206/06 *Essent Netwerk Noord BV v Nederlands Elektriciteit Administratiekantoor BV and Saranne BV*, EU:C:2008:413 para 43 to 47

¹⁵⁴⁸ Case T-251/11, *Austria v Commission*, ECLI:EU:T:2014:1060

¹⁵⁴⁹ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 128

¹⁵⁵⁰ Case T-67/94, *Ladbroke Racing v Commission*, EU:T:1998:7, para 106 to 108

¹⁵⁵¹ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281, para 127

¹⁵⁵² M E Porter and C van der Lind, 'Toward a new conception of the Environmental-Competitiveness Relationship' (1995) 9(4) *The Journal of Economic Perspectives*, 97

¹⁵⁵³ Case C-5/94 *R v Ministry of Agriculture Fisheries & Food ex parte Hedley Lomas* ECLI:EU:C:1996:205, para 20

¹⁵⁵⁴ Case C-288/96 *Germany v Commission* ECLI: EU:C:2000:537, para 88 to 91; Case C-156/98 *Germany v Commission* ECLI: EU:C:2000:467, para 30; Case C-459/10P *Freistaat Sachsen and Land Sachsen-Anhalt v Commission* ECLI:EU:C:2011:515, para 33 to 36

renewable electricity and threatened the stability of the electricity grid. Therefore, in August 2014, Germany decided to impose the EEG-surcharge also on self-supplied electricity.¹⁵⁵⁵ In December 2017 the Commission determined that in order to maintain industrial stability an exemption from EEG-surcharges for self-supply would not be regarded as state aid, provided the equipment used for the self-supply met certain carbon emissions targets.¹⁵⁵⁶ The Commission went on, in March 2018, to declare other EEG-surcharge reductions for railways and 'electro-intensive undertakings' were also allowable state aid.¹⁵⁵⁷

As was the case in *Vent De Colère*¹⁵⁵⁸ and *Austrian Green Levy*¹⁵⁵⁹ the case is confirmation that the CJEU is prioritising the development of renewable energy over the provisions of EU law (again free movement and state aid) and thus a diagonal conflict exists. These findings again leading to the clear lesson that design of the scheme is key to its compatibility with the provisions of the 2014 Guidelines on state aid for Renewables and the findings in *Pearle*¹⁵⁶⁰ and *Alcoa Trasformazioni*¹⁵⁶¹ generally, and *Altmark Trans*¹⁵⁶² for renewable electricity specifically.

The legacy of the case, however, is not the fact that support scheme¹⁵⁶³ design must be such that state management and control of the monies is to be avoided and that differential exemption from the payment of the levy is state aid, but is that continued lobbying of the Commission can bring about changes in state aid practice. The CJEU in its finding applied EU law as it stood at the time in question, but the Commission Decision in 2017,¹⁵⁶⁴ that self-supply could be exempt from the

¹⁵⁵⁵ Renewable Energy Sources Act 2014 (Erneuerbare Energien Gesetz – 'EEG 2014')

¹⁵⁵⁶ European Commission, Decision of 19 December 2017 Reduced surcharge for self-generation under EEG 2017 SA.38632

¹⁵⁵⁷ Commission Decision of 28 March 2018 relating to the offshore-surcharge reduction for railway undertakings in Germany SA.50395; See also Commission Decision of 28 March 2018 relating to reductions in the offshore surcharge for electro-intensive undertakings and reductions on the CHP surcharge for electricity produced from waste gases in Germany SA.49416

¹⁵⁵⁸ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹⁵⁵⁹ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁵⁶⁰ Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfschap Ambachten* ECLI:EU:C:2004:448 para 33

¹⁵⁶¹ Case T-177/10, *Alcoa Trasformazioni v Commission*, ECLI:EU:T:2014:897

¹⁵⁶² Case C-280/00 *Altmark Trans GmbH and Regierungspräsidium Magdeburg v Nahverkehrsgesellschaft Altmark GmbH, and Oberbundesanwalt beim Bundesverwaltungsgericht* ECLI:EU:C:2003:415.

¹⁵⁶³ 'support scheme' means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁵⁶⁴ European Commission, Decision of 19 December 2017 Reduced surcharge for self-generation under EEG 2017 SA.38632

green levy surcharge, and the 2018 Decision,¹⁵⁶⁵ that reductions in levy charges for ‘electro-intensive undertakings’ were also allowable state aid, have effectively ensured that the position put forward by Germany at the time of the CJEU proceedings is now allowable state aid. Nothing has fundamentally changed in relation to network flows of electricity, or the costs imposed on end users of electricity by the renewables support scheme. With the now allowable state aid it is argued that exempting the intensive energy users and transferring the costs which they would have paid to other consumers of electricity (usually small industrial, commercial and domestic) is a breach of Article 107(1) TFEU, as the practice distinctly favours the intensive users.

Additionally, the practice conflicts with Article 107(1) TFEU in that it applies dissimilar conditions to different end users for the equivalent transaction of buying electricity and it is thus distortive of competition.

3.5.13 State Aid Embedded Benefits & Network Access - *Essent 2*¹⁵⁶⁶

The *Essent 2* case shows the difference in approach taken by the CJEU in relation to network access¹⁵⁶⁷ compared to access to the national support scheme from renewable electricity. The judgement held that legislation of the Flemish Region in Belgium, limiting distribution of renewable electricity to that produced by generators connected to distribution systems in Belgium, was in breach of EU Treaty rules on free movement, as well as the provisions of the 1996 and 2003 Electricity Liberalisation Directives and the 2001 Renewable Energy Directive¹⁵⁶⁸ (the version of the Directive in force at the applicable time). The judgement contrasts with the Court's judgements in *Essent 1*¹⁵⁶⁹ (Section 3.5.1) and *Ålands Vindkraft*¹⁵⁷⁰ (Section 3.5.2) which held that limiting the national renewables support scheme to domestically generated renewable electricity was not in breach of the free movement of goods. This judgment sets out a wider principle that national transmission and

¹⁵⁶⁵ Commission Decision of 28 March 2018 relating to the offshore-surcharge reduction for railway undertakings in Germany SA.50395; See also Commission Decision of 28 March 2018 relating to reductions in the offshore surcharge for electro-intensive undertakings and reductions on the CHP surcharge for electricity produced from waste gases in Germany SA.49416

¹⁵⁶⁶ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

¹⁵⁶⁷ Priority network access is the obligation placed on member states to establish transparent and proportionate administrative procedures for the conclusion of network connection for renewable electricity facilities in accordance with Article 13 and 16 of the Renewable Energy Directive

¹⁵⁶⁸ EU Directive (2001/77/EC) 27 September 2001 ‘The promotion of electricity produced from renewable energy sources in the internal electricity market’ OJ L 283/33

¹⁵⁶⁹ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁵⁷⁰ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

distribution regimes, and in particular rules on third party access,¹⁵⁷¹ must not discriminate against power imported from other member states.

The Legislation of the Flemish Region from 2003 provided that distribution of electricity from renewable sources in the Flemish region was free for renewable electricity generators in the Region. In 2004, free distribution was extended to renewable electricity generated by generators connected to a distribution system anywhere in Belgium. Essent, which supplied renewable electricity, imported from the Netherlands to customers in Belgium,¹⁵⁷² via distribution networks in the Flemish Region, sought compensation from the Flemish Region totalling nearly €15.9 million for being excluded from these free distribution arrangements.¹⁵⁷³

The Belgian court sought a preliminary ruling from the CJEU, essentially asking whether the Flemish legislation was in breach of (i) Article 34 TFEU (free movement), (ii) of relevant provisions of the Electricity Market Liberalisation Directives 96/92 and 2003/54 and (iii) the Renewable Energy Directive 2001/77.¹⁵⁷⁴

The CJEU noted that the purpose of the 2001 Renewable Energy Directive (still in force at the time) was to promote the production of renewable energy.¹⁵⁷⁵ The Directive therefore outlined various mechanisms seen as supporting renewable electricity production.¹⁵⁷⁶ The CJEU noted that the 2001 Renewable Energy Directive allows member states considerable latitude in the decision as to the design of the renewable support scheme implemented.¹⁵⁷⁷ However, the Court noted that the Flemish legislation did not directly support renewable electricity production, *'the regional legislation....constitutes neither an advantage nor direct support to green electricity producers, since that free distribution primarily benefits suppliers and therefore, in principle, the consumer'*.¹⁵⁷⁸ The Flemish legislation could therefore only provide indirect support to producers of renewable electricity. While the measures set out in the Flemish legislation would in principle lead to an increase in national production of renewable electricity, at the same time they must comply with the Treaty rules on free movement.¹⁵⁷⁹ The Court also noted that Article 7(6) of the

¹⁵⁷¹ Third Party Access (TPA) is a legally enforceable right of independent undertakings to access and use, in certain circumstances, various energy network facilities owned by other companies.

¹⁵⁷² Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732, para 33

¹⁵⁷³ *Ibid*, para 34

¹⁵⁷⁴ *Ibid*, para 36

¹⁵⁷⁵ *Ibid*, para 53

¹⁵⁷⁶ *Ibid*, para 58 – referring to Recital 14 of 2001 renewable Energy Directive and Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399, para 52 confirming the Recital was simply a list and not a mandatory obligation to implement all features listed

¹⁵⁷⁷ *Ibid*, para 60

¹⁵⁷⁸ *Ibid*, para 61

¹⁵⁷⁹ *Ibid*, para 65

2001 Renewable Energy Directive required member states to ensure that grid charges do not discriminate against electricity from renewable energy sources.¹⁵⁸⁰

The Court then turned to the Electricity Market Directives 96/92 and 2003/54¹⁵⁸¹ relating to non-discriminatory access to the distribution network. The Court held that Article 16 of the 1992 Directive and Article 20(1) of the 2003 Directive required member states to ensure non-discriminatory access to the transmission and distribution systems.¹⁵⁸² The Court confirmed that the concept of access to the system covered the use of the system as well as connection to it, and applied to suppliers as well as producers.¹⁵⁸³ The principle of non-discrimination meant that comparable situations must not be treated differently unless the difference in treatment was objectively justified.¹⁵⁸⁴ The Flemish legislation granted exemption from the distribution fees only for electricity originating in Belgium, this therefore amounting to different treatment.¹⁵⁸⁵

The Court rejected the argument by the Flemish Region and the Flemish energy regulator that the rules on priority dispatch¹⁵⁸⁶ of renewable generation set out in Article 11(3) of the 1996 Electricity Market Directive and Article 14(4) of the 2003 Electricity Markets Directive provided justification for the difference in treatment of nationally-generated renewable energy.¹⁵⁸⁷ However, it recognised that the objective supposedly pursued by the Flemish legislation, namely the promotion of renewable electricity, was legitimate.¹⁵⁸⁸

The Court noted that the Directives permitted member states to impose public service obligations on electricity undertakings, namely '*environmental protection, including climate protection*',¹⁵⁸⁹ which was interpreted as the obligation to distribute renewable electricity without charge. However, these obligations must be applied proportionately and in compliance with the rules on free movement in accordance with Articles 28 to 34 TFEU.¹⁵⁹⁰ The Flemish legislation encouraged

¹⁵⁸⁰ Ibid, para 68

¹⁵⁸¹ Directive 2003/54 concerning common rules for the internal market in electricity and repealing Directive 96/92 [2003] OJ L176/37

¹⁵⁸² Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732, para 69

¹⁵⁸³ Ibid, para 70 to 75

¹⁵⁸⁴ Ibid, para 80 – confirming Case C-17/03 *Vereniging voor Energie Milieu en Water v Directeur van de Dienst Uitvoering en Toezicht Energie* para 47

¹⁵⁸⁵ Ibid, para 82 to 85

¹⁵⁸⁶ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

¹⁵⁸⁷ Ibid, para 83

¹⁵⁸⁸ Ibid, para 84

¹⁵⁸⁹ Ibid, para 87

¹⁵⁹⁰ Ibid, para 96

electricity suppliers to buy renewable electricity generated locally and was therefore capable of hindering imports of electricity from other member states.¹⁵⁹¹ It was therefore a measure equivalent to a quantitative restriction prohibited by Article 34 TFEU (the Article 28 TEC).¹⁵⁹² It could nevertheless be justified on one of the public interest grounds set out in Article 30 TEC or by overriding objective,¹⁵⁹³ and must in either case be proportionate.¹⁵⁹⁴ The protection of the environment and the objective of increasing the use of renewable energy sources were an overriding objective. The increased use of renewable energy sources was also useful for the protection of the health and life of animals, plants and humans, and therefore fell within Article 30 TEC (now Article 36 TFEU), as the Court held in its judgement in *Ålands Vindkraft*.¹⁵⁹⁵

The Court then turned to the issue of proportionality, which was critical to the question of whether the Flemish legislation was compatible with Directives 96/92, 2003/54 and 2001/77, and with the derogation to the requirement to allow free movement of goods.¹⁵⁹⁶

To be proportionate, the national legislation must be appropriate to the achievement of the objective of promoting an increase in the production of renewable electricity, and must be necessary for that purpose as well. The Court acknowledged that national support schemes for renewable electricity are targeted at the production of electricity rather than its consumption because reductions in emissions are realised in the production of electricity rather than its consumption.¹⁵⁹⁷ That, together with the fact that EU law had not harmonised national support schemes for renewable electricity, justified the limitation of the Swedish renewable certificates scheme to renewable energy sources located in Sweden to the exclusion of sources in Finland in *Ålands Vindkraft*. Similarly, in *Essent 1*,¹⁵⁹⁸ the renewable certificates were intended to incentivise an increase in the production of renewable electricity.¹⁵⁹⁹

However, the Court noted that in this case free distribution of nationally-generated renewable electricity was not intended to give direct support to producers,

¹⁵⁹¹ Ibid, para 98

¹⁵⁹² Ibid, para 92

¹⁵⁹³ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁵⁹⁴ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732, para 100

¹⁵⁹⁵ Ibid, para 101

¹⁵⁹⁶ Ibid, para 104

¹⁵⁹⁷ Ibid, para 105

¹⁵⁹⁸ Joined cases C-204–208/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁵⁹⁹ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732, para 107

as it primarily benefited suppliers,¹⁶⁰⁰ with no guarantee that the benefit would be passed on to producers.¹⁶⁰¹ The Court stated that the passing on of these benefits would depend on other factors such as electricity prices, supply and demand and relative bargaining strengths of the producers and suppliers, with support being 'indirect, uncertain and risky'.¹⁶⁰² The Court stated that more certain and effective ways of supporting the production of renewable electricity, without discriminatory third party network access, were available thus the Flemish scheme was not proportionate and thus state aid.¹⁶⁰³

The significance of this case is not as another confirmation of the conflict between the renewable energy regulatory framework and free movement of goods, but the finding that the failure to charge renewable generators for network access (so called 'embedded benefits') is a form of state aid.

Upon review of the *Essent 1*,¹⁶⁰⁴ *Ålands Vindkraft*¹⁶⁰⁵ and *Essent 2*¹⁶⁰⁶ cases together it is clear that some important principles emerge. *Essent 1* shows that supporting renewable generation via revenue enhancing support schemes can be justified using the simply overriding objective¹⁶⁰⁷ of renewable electricity set out in *ADBHU*¹⁶⁰⁸ and *Danish Bottle*.¹⁶⁰⁹ The *Ålands Vindkraft* case shows a very clear limitation of access to the nationally focussed renewable electricity support scheme to renewable electricity facilities within that member state. The *Essent 2* case however, shows two new issues that expand the understanding of the EU's renewables regulatory framework. *Essent 2* shows that limiting access to the network for electricity from other member states is a breach of free movement. Hence it can be seen that access to a renewable electricity 'support scheme' is different from access to the electricity network.

Secondly, that seeking to exempt local renewable generation from network charges on the basis that these costs are part of a cost base to which renewable generation undertakings would normally be exposed, is a simple application of the

¹⁶⁰⁰ Ibid, para 112

¹⁶⁰¹ Ibid, para 113

¹⁶⁰² Ibid, para 116

¹⁶⁰³ Ibid, para 117

¹⁶⁰⁴ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁶⁰⁵ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁶⁰⁶ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

¹⁶⁰⁷ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁶⁰⁸ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹⁶⁰⁹ Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

principle set out in *GEMO*¹⁶¹⁰ where an undertaking relieved of costs it would normally face is state aid.

3.5.14 Summary of Conflicts between Renewable Energy Directive¹⁶¹¹ & EU Free Trade Principles

Free Movement

The three cases outlined (*Essent 1*¹⁶¹², *Ålands Vindkraft*¹⁶¹³ and *Green Network*¹⁶¹⁴) show a progression from the simple application of the *ADBHU*¹⁶¹⁵ and *Danish Bottle*¹⁶¹⁶ justification for applying an exception to the requirement to enforce free movement of goods, to a subtler application of a restriction to only access to the renewable electricity support scheme rather than a free movement restriction, to actual flows of renewable electricity in *Essent 2*.¹⁶¹⁷

. The *Ålands Vindkraft*¹⁶¹⁸ case shows that the CJEU is willing to enforce a member state by member state focussed renewable support scheme rather than applying a wider interpretation of the need to support renewables. The case is a missed opportunity to give equal weight to the network provisions (Article 170 TFEU and 194(1)(d) TFEU) and provide the widest support to renewables required by Article 194(1)(c) TFEU.

The *Green Network*¹⁶¹⁹ case brings out the competence issue related to renewable electricity origin recognition agreements. The case confirms that the Commission has exclusive competence to negotiate a renewable electricity origin recognition agreement with third countries.

¹⁶¹⁰ Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622, para. 31 to 34. AG Jacobs had considered that 'the provision free of charge of a collection and disposal service for dangerous animal waste [was relieving the] ... farmers and slaughterhouses of an economic burden which would normally, in accordance with the polluter-pays principle, have to be borne by those undertakings'. See Opinion AG Jacobs in Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2002:273, para. 64

¹⁶¹¹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹⁶¹² C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁶¹³ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁶¹⁴ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

¹⁶¹⁵ Case 240/83 *Procureur de la République v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59, para 13

¹⁶¹⁶ Case 302/86, *Commission v Denmark* ECLI:EU:C:1988:421, para 8 & 9

¹⁶¹⁷ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

¹⁶¹⁸ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁶¹⁹ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

The analysis of the Public Procurement Directive¹⁶²⁰ shows that it strictly applies the free movement criteria for the purchase of electricity by public bodies. The analysis further confirms that the free movement restrictions only relate to the ability to access the renewable electricity support mechanism of a member state and not the access to the electricity network and flows of electricity thereupon.

Irrespective of the subtlety of the free movement restriction it still shows that the Renewable Energy Directive is in diagonal conflict with the Treaty provisions relating to the free movement of goods.

State Aid - Price Fixing

The *PreussenElektra*¹⁶²¹ and the *Essent*¹⁶²² judgements show that the CJEU is prepared to apply an overriding objective criterion in the support of renewable electricity in terms of price in conflict with the provisions of Article 107(1) TFEU which restricts the fixing of prices or other trading conditions which would be distortive of competition.

State Resources - State Aid

Environmental protection and sustainable development are general principles of law that articulate a series of sub-principles contained in the Treaty - including the 'precautionary principle', 'rectification at source' and the 'polluter-pays principle'.¹⁶²³ However, the lack of consistency in using these sub-principles in secondary EU legislation weakens the CJEU's coherent handling of the concept in its decisions.¹⁶²⁴ This research thus suggests this inconsistency brought an initial perception amongst member states that their discretion to put in place national renewable electricity support schemes was wider than it has been held to be in more recent judgments. This initial perception, built on the *PreussenElektra*¹⁶²⁵ case, led to the renewable

¹⁶²⁰ EU Directive 2014/24/EU 'Directive on Public Procurement' OJ L 94

¹⁶²¹ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹⁶²² C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁶²³ Luis Avilés, 'Sustainable development and environmental legal protection in the European Union: A model for Mexican courts to follow?' (2014) 6(2) Mexican Law Review, 251

¹⁶²⁴ Luis Avilés, 'Sustainable development and environmental legal protection in the European Union: A model for Mexican courts to follow?' (2014) 6(2) Mexican Law Review, 251 Ibid

¹⁶²⁵ Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

electricity support schemes put in place in France (*Vent De Colère*),¹⁶²⁶ Austria (*Austrian Green Levy*)¹⁶²⁷ and Germany (*German Green Levy*).¹⁶²⁸ What these later cases show is that *PreussenElektra* was not the general rule, but a special case, due the responsible German Minister prohibiting the transfer of funds from a state entity to fund the renewable electricity support scheme.

Additionally, the cases show that irrespective of assurances of national authorities that the support scheme in question is not prohibited state aid it is for the undertaking to be satisfied that the aid granted follows Article 107 TFEU and the Commission's guidelines, assurances of national authorities or even the commission are no defence.¹⁶²⁹

The cases show that the design of the renewables support scheme is critical to it not being found to be prohibited state aid.

The *PreussenElektra* case is significant as it really led the way with the CJEU finding that a price enhancing renewables support scheme was not state aid.

The cases have led to the Commission essentially deciding that support for renewables is to be allowed via the provisions of the General Block Exemption Regulation (GBER)¹⁶³⁰ and the 2014 Guidelines on State Aid for Environmental Protection & Energy.¹⁶³¹

Additionally, the legacy of the German Green Levy¹⁶³² case is that continued lobbying of the Commission has led to the exemption of intensive energy users from the requirement to pay green levies to fund renewable electricity support schemes, despite this situation being found by the CJEU to be state aid. Hence the Commission has essentially changed EU law and placed itself above the CJEU.

As the Commission has exclusive competence in the determination of state aid, it being known that Commission Decisions and guidelines are normative and the CJEU has held them to be binding on the Commission,¹⁶³³ this means that

¹⁶²⁶ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹⁶²⁷ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁶²⁸ Commission Decision 2015/1585, Aid Scheme SA 33995 'implemented by Germany for the support of renewable electricity and of energy-intensive users', available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁶²⁹ Case C-349/17 *Eesti Pagar v Ettevõtjate Arendamise Sihtasutus*, ECLI:EU:C:2019:172

¹⁶³⁰ EU Regulation No 1588/2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, OJ 2015 L 248/1, and European Commission, Regulation (EU) No 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. General Block Exemption Regulations for State aid ('GBER')

¹⁶³¹ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01

¹⁶³² Commission Decision 2015/1585, Aid Scheme SA 33995 – "implemented by Germany for the support of renewable electricity and of energy-intensive users", available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁶³³ Case C-313/90 *Comité International de la Rayonne et des Fibres Synthétiques v Commission* ECLI:EU:C:1993:111, para. 36; See Also Case C-351/98 *Spain v Commission* ECLI:EU:C:2002:530, para 53

renewable support schemes are only required to comply with the Commissions decisions and not the Treaty Articles. This is a considerable area of diagonal conflict between the renewable electricity regulatory regime and the Treaty, and also shows how the competence granted to the Commission has been used to develop the law in this area.

Therefore, in summary, the Renewable Energy Directive, and the national renewable support schemes which it requires, are only put in place by allowing indigenous renewable generation access to such schemes in a diagonal conflict with free movement. Additionally, the price fixing processes of the renewable support schemes enhance revenues for renewable generation, the cost recovery mechanisms of these support schemes being focussed on consumers and due to the level of control exercised by the state, the schemes, if not designed correctly, can be held to be state aid.

3.6 Emissions Trading Directive¹⁶³⁴ & Conflicts with EU Free trade Principles

The main features of the Emissions Trading Directive were outlined in Section 2.10.1. The Directive has facilitated the setting up of the EU emissions trading scheme (EU-ETS). The EU-ETS is a cap and trade system which works by setting limits on overall emissions in line with the emissions allowances available, with the number of allowances reducing overtime. Within the limit of emissions, companies may buy and sell allowances as needed to match their actual emissions. The market mechanism provided by the EU-ETS as well as providing a market to trade emissions allowances, has the overall aim of reducing emissions overtime.

This section sets out the basic conflicts between the Directive, the Treaty and elements of the EU's free trade principles. It should be recalled that the Directive is market in style and falls within the competency¹⁶³⁵ of the Commission,¹⁶³⁶ except for the national emissions allowance allocation plans which are within the competence of the member states.¹⁶³⁷

¹⁶³⁴ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁶³⁵ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁶³⁶ Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

¹⁶³⁷ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

This section also undertakes a detailed analysis of the conflicts outlined using case law and in so doing seeks to ascertain if it is the Directive's style or its competency framework adds to these conflicts. The analysis commences with the state aid implications of over allocation of emission allowances before moving on to the conflicts with the 'polluter pays' principle.

3.6.1 Competency and National Allocation Plans of Emission Allowances - *Commission v Estonia*¹⁶³⁸

The Commission has the overall competence for the Emission Trading Directive¹⁶³⁹ and the EU-ETS.¹⁶⁴⁰ However, during the initial trading period the Directive required the allocation of emission allowances in accordance with the national allocation plans (NAP - Directive Article 11(2)). Following the development of an allocation plan by Estonia, the Commission undertook a review of the plan in accordance with Directive Article 9(3) and sought a reduction in the allocation of allowances by 47.8%.¹⁶⁴¹ The Commission then sought to substitute an allocation plan of its own to manage what it saw as an over allocation of allowances.

The CJEU subsequently determined the limit of the competence of the Commission and the member state in relation to the EU-ETS and the NAP. It was held by the CJEU that the Commission was required to undertake a review of the NAP in accordance with the provisions of Annex III of the Directive, essentially a legal review,¹⁶⁴² and that the review was to consider, firstly, if the volume of allowances in the national plan were consistent with the actual and projected emissions such as to allow the EU as a whole to meet its Kyoto commitments, and secondly, if the plan had been made in such a manner that it did not discriminate between undertakings so as to favour certain market participants and especially in the context of Articles 87 and 88 TEC (now 107 and 108 TFEU – state aid).¹⁶⁴³

The CJEU held that the Commission as part of its review, or as an outcome of the review, does not have the competence to substitute its own allocation plan for that of the member state.¹⁶⁴⁴ The CJEU went on to say that the member state has

¹⁶³⁸ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

¹⁶³⁹ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁶⁴⁰ Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

¹⁶⁴¹ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179, para 8

¹⁶⁴² Ibid, para 49 and 82

¹⁶⁴³ Ibid, para 7

¹⁶⁴⁴ Ibid, para 63

the competence to develop an allocation plan of its choosing, using methods of its choosing.¹⁶⁴⁵

Lastly the CJEU stated that the Commission is not able to determine and then substitute what it believes the EU legislator wanted to say in an EU legal instrument or, in this instance, what would be more compliant with the EU's commitments in accordance with the Kyoto Protocol.¹⁶⁴⁶

The *Estonia*¹⁶⁴⁷ case is in many respects a simple determination of competence between the Commission and the member state. However, it also shows the conflict between the overall objectives of carbon emissions reduction and nationally determined emission allowance allocation plans. In the arguments about the competencies of the Commission and the member state what was overlooked was the considerable volume of over allocated allowances. The Directive, in giving guidance on the development of the NAP specifically required that the plan should not favour one undertaking over another such that state aid is conferred.¹⁶⁴⁸ Had the Commission simply accepted, even with comments, the allocation method and the Estonian NAP, it could then have brought a case related to state aid, and the large volume of allowances available in the EU-ETS during the initial phase may well have been avoided. What occurred, was that the Commission exceeded its competence, sought to implement an allowance volume it thought best, this was rejected by the CJEU, and over allocation by member states continued. Thus, the EU-ETS is in diagonal conflict with the Treaty provisions related to state aid, as the NAP did provide an advantage to certain undertakings in contravention with Article 107 TFEU.

The case also makes a more general point about the competencies of the Commission related to its requirement to administer the legal framework in place. The *Estonia* case also confirmed two earlier findings¹⁶⁴⁹ (i) that it was not for the Commission to seek to determine what legislative drafting would be better to abate climate change or other obligations of the EU or (ii) seek to follow that 'better' drafting; the Commission must follow the drafting of the legislation as executed. The Commission simply receives the competencies conferred upon it.

¹⁶⁴⁵ Ibid, para 66

¹⁶⁴⁶ Ibid, para 121

¹⁶⁴⁷ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

¹⁶⁴⁸ Annex III - Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁶⁴⁹ Case C-239/01 *Germany v Commission* ECLI:EU:C:2003:514 para 37 and Case C-244/03 *France v Parliament & Council* ECLI:EU:C:2005:299, para 14

Additionally, the EU-ETS can be seen to conflict with the provisions of the TFEU related to the polluter pays principle. With the allocation of allowances for free at no level can it be considered that the polluter has paid.

Even if the allocation of free allowance could be considered a temporary measure to allow the EU-ETS to get started, and thus proportionate to an overall objective of emissions reduction once the allowances allocated exceeded the actual level of emissions the system could no longer be considered proportionate and simply a means of certain member states providing additional income to its industrial base at the expense of undertakings from other member states also trading in the market.

3.6.2 State Aid Over Allocation of Emission Allowances - *Borealis Polyolefine*¹⁶⁵⁰

The *Borealis Polyolefine* case can at one level be considered to be going over the same ground as that analysed in *Estonia*,¹⁶⁵¹ that being one of competence and over allocation. However, this later case shows that the Commission's Guidelines on state aid from Emissions Allowances¹⁶⁵² had moved on from the *Estonia* period and were now very much focussed on the EU-ETS as it was operating at the time following considerable lobbying by member states and industry players.

From the commencement of the third EU-ETS trading period in 2013 the Commission undertook the allocation of emissions allowances in a top down process. The *Borealis Polyolefine* case concerns a preliminary ruling relating to the validity of a Commission Decision¹⁶⁵³ determining the transitional EU-wide and national rules for the harmonised free allocation of emission allowances pursuant to Articles 9(3), 10(a) and 11(2) of the Emission Trading Directive.¹⁶⁵⁴

Within the context of the EU-ETS, Borealis maintained it was eligible for a free allocation of allowances for the period from 2013 to 2020 as the operator of a cogeneration¹⁶⁵⁵ plant. Borealis maintained that the Commission should have

¹⁶⁵⁰ Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311

¹⁶⁵¹ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

¹⁶⁵² Commission Communication 5 June 2012 'Guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012' OJ 2012/C 158/04

¹⁶⁵³ Commission Decision 2011/278/EU of 27 April 2011 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC (Emissions Trading Directive)

¹⁶⁵⁴ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁶⁵⁵ Cogeneration is the production electricity and heat from the same facility

included emissions from this type of electricity generator in the maximum annual volume of allowances, furthermore submitting, that the exclusion of emissions associated with the generation of electricity and with heat produced in cogeneration is contrary to the Directive.¹⁶⁵⁶

The CJEU confirmed the understanding of the Emissions Trading Directive by stating that in accordance with Directive Articles 10(1) and 10(a)(3) that full auctioning of allowances is required for electricity generators from 2013¹⁶⁵⁷ and that in accordance with Directive Article 10(a)(11) the quantity of free allowances is to decrease gradually, with a view to reaching zero free allocation by 2027.¹⁶⁵⁸ The CJEU also confirmed that cogeneration plant is able to receive free emission allowances in accordance with the Directive.¹⁶⁵⁹

The Court held that the Directive is drafted to ensure that the final number of allowances to be allocated free of charge to industrial installations does not include emissions from the general generation of electricity (only allowing free allowance for electricity generated from waste gases and for heat produced in cogeneration plant) and thus the Commission's Decision on the allocation process had to be modified.¹⁶⁶⁰

The ruling makes it clear that emissions from electricity generation are to be excluded from the calculation of free allowances, therefore reducing their amount. However, the ruling confirms that free allowances generally will not be phased out completely until 2027,¹⁶⁶¹ meaning that the weighted average price of emissions allowances within the emissions trading mechanism will be a hybrid of free (grandfathered allocation)¹⁶⁶² and those which have been purchased.

The *Borealis Polyolefine* case shows that certain types of electricity generator were still receiving free allowances in 2013 and beyond. It is known from the *Stardust*¹⁶⁶³ case that when public authorities grant aid directly to an undertaking, such behaviour is attributable to the State. It is also known from *EnBW*¹⁶⁶⁴ that should the State grant emission allowances for free or below market value there is a foregoing of public revenue and the practice being state aid. The

¹⁶⁵⁶ Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311, para 61

¹⁶⁵⁷ Recital 19 to the Emission Trading Directive 2009/29/EC

¹⁶⁵⁸ *Ibid*, para 82

¹⁶⁵⁹ *Ibid*, para 76

¹⁶⁶⁰ *Ibid*, para 83

¹⁶⁶¹ *Ibid*, para 92

¹⁶⁶² The allocation for free of EU-ETS allowance on the basis of historic emission patterns. With the view that prior emissions increased entitlements to future emissions allowances - Carl Knight, 'What is grandfathering?' (2013) 22(3) *Environmental Politics*, 410 See Also Mehdy Abbas Khayli 'The Roles Played by the Polluter Pays Principle in state aid Law' (2013) 6 Jean Monnet Working Paper Series available at www.tradeenvironment.eu accessed 28 October 2017

¹⁶⁶³ Case C-482/99, *France v Commission*, ECLI:EU:C:2002:294, para 52

¹⁶⁶⁴ Case T-387/04, *EnBW Energie Baden-Württemberg v Commission* ECLI:EU:T:2007:117, para 23

Emissions Trading Directive allowed the allocation of allowances for free, up to 95% of emissions during the initial trading phase and then decreasingly over the subsequent trading periods. It is therefore clear that the Emissions Trading Directive is in diagonal conflict with Article 107(1) TFEU in that allowances granted to certain undertakings favour those undertakings. In fact, the Commission Guidelines on State Aid for Emissions Allowances¹⁶⁶⁵ confirms in paragraph 3 that the allocation of allowances for free is incompatible with Article 107(1) TFEU (state aid). However, the allocation, once notified to the Commission will be assessed in accordance with the Guidelines. It has also been stated that the advantage is attributable to the undertaking at the point the allocation is made, as the undertaking is not required to purchase allowances it would otherwise be required to do; thus, the state aid is irrespective of any trading activity to accrue a windfall profit.¹⁶⁶⁶

As the Commission has competence over state aid,¹⁶⁶⁷ the Commission's transparency and legal certainty obligations require the publication of the Guidelines¹⁶⁶⁸ to explain the compatibility criteria for state aid in the context of the allocation of emission allowances. These Guidelines, although nonbinding 'soft-law'¹⁶⁶⁹ they are normative and the CJEU has held Commission guidelines to be binding on the Commission.¹⁶⁷⁰ Therefore it is argued that the Commission is 'making the law up' as needed to manage the political and social environment in a 'complex governance structure, embedded with legal complexities'¹⁶⁷¹ and the sub-objectives to carbon reduction of the 'safeguarding of economic development and employment and the preservation of the integrity of the internal market'¹⁶⁷² and of conditions of competition'.¹⁶⁷³

¹⁶⁶⁵ Commission Communication 5 June 2012 'Guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012' OJ 2012/C 158/04

¹⁶⁶⁶ Guendalina Catti De Gasperi, 'Making State Aid Control "Greener": The EU Emissions Trading System and its Compatibility with Article 107 TFEU' (2010) 9(4) European State Aid Law Quarterly, 785, 792-793

¹⁶⁶⁷ Case T-459/93 *Siemens v Commission* ECLI:EU:T:1995:100, para 52

¹⁶⁶⁸ Commission Communication 5 June 2012 'Guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012' OJ 2012/C 158/04

¹⁶⁶⁹ Soft-Law can be defined as any instrument other than a Treaty or a Statute, containing principles, norms, standards or other statements of expected behaviour, it can also be market rules developed from an instrument – See Dinah Shelton, 'International Law and Relative Normativity' in Malcom Evans (ed) *International Law* (4th Edition Oxford University Press, 2014), 137, 159

¹⁶⁷⁰ Case C-313/90 *Comité International de la Rayonne et des Fibres Synthétiques v Commission* ECLI:EU:C:1993:111, para. 36; See Also Case C-351/98 *Spain v Commission* ECLI:EU:C:2002:530, para 53

¹⁶⁷¹ Sanja Bogoević *EU Climate Change Litigation, the Role of the European Courts, and the Importance of Legal Culture* (Wiley, 2013), 50

¹⁶⁷² Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

¹⁶⁷³ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469; para 49

3.6.3 Emissions Trading – Hardship & Lack of Harmonisation - *DK Recycling*¹⁶⁷⁴

The *Borealis Polyolefine*¹⁶⁷⁵ case outlined the issues surrounding the state aid implications of a general position of free allocation of emissions allowances. The *DK Recycling* case looks at the position due to the introduction of a hardship clause, and the consequent ‘case-by-case’ approach that this would entail, which could be argued to increase the diversity of state aid issues in relation to the EU-ETS rather than progressing to a harmonised position.

Germany implemented Commission Decision¹⁶⁷⁶ 2011/27843 on the transitional EU rules for harmonised free allocation of emission allowances via a law on carbon emissions trading (Treibhausgas-Emissionshandelsgesetz, ‘TEHG’) in 2011. Within TEHG, Article 9(5) allowed for the allocation of additional free emission allowances to organisations for which the allocation based on Article 10 of the Emission Trading Directive, without the additional free allowances, would result in ‘undue hardship’. Emissions Directive Article 11 requires member states to submit to the Commission a list of organisations to which free allowances will be allocated and the quantity of such. In accordance with this requirement, Germany submitted its national allocation plan, which included DK Recycling on the basis of ‘undue hardship’. The Commission rejected the allocation plan in Decision 2013/448.¹⁶⁷⁷ The Commission stating that the Emissions Trading Directive was drafted to ensure harmonisation of the rules relating to free allocation. This harmonised approach would thus be undermined by an individual analysis of ‘hardship’. The Commission going on to submit that assigning extra-allowances to certain installations would distort, or threaten to distort, competition, hence would have an EU-wide effect on trade, in violation of the principle of equal treatment¹⁶⁷⁸ and be state aid due to the conferral of this advantage by the state.

¹⁶⁷⁴ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

¹⁶⁷⁵ Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311

¹⁶⁷⁶ Commission Decision (2011/278/EU) of 27 April 2011 ‘determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC [Emissions Trading Directive]’ OJ L 130/1

¹⁶⁷⁷ Commission Decision 2013/448/EU of 5 September 2013 concerning national implementation measures for the transitional free allocation of carbon emission allowances in accordance with Article 11(3) of Directive 2003/87/EC

¹⁶⁷⁸ Recital 11 of Decision 2013/448

An action seeking annulment of the Commission's Decision was brought before the General Court.¹⁶⁷⁹ The finding of the General Court was subsequently appealed to the CJEU.¹⁶⁸⁰

The CJEU's analysis sought to understand the basis of the ability of the Commission to conclude harmonisation measures relating to the rules of free allocation of emission allowances. Hence the Court went on to hold that the Commission's ability to harmonise the rules on free allocation were meant to amend 'non-essential elements' of the Directive (Article 10a of the Directive), and that 'essential elements' of legislation cannot be amended by the Commission simply implementing new 'measures'.¹⁶⁸¹ This finding goes straight back to the finding of the CJEU in the *Estonia*¹⁶⁸² case (See Section 3.6.1) where it held that the Commission is not able to determine and then substitute what it believes the EU legislator wanted to say in an EU legal instrument or, in this instance, what would be a better process.

The CJEU's analysis focussed on the inclusion of drafting within the statute which allowed allocation of emission allowances based on 'hardship' and whether such an allocation amounted to amending an 'essential' element of the Directive. The Court stated that the determination of an 'essential' or 'non-essential' element, *'must be based on objective factors amenable to judicial review, and requires account to be taken of the characteristics and particular features of the field concerned'*.¹⁶⁸³ The Court was clear that the core objective of the Emissions Trading Directive was the reduction in carbon emission. However, it was able to determine a series of sub-objectives such as *'the safeguarding of economic development and employment and the preservation of the integrity of the internal market and of conditions of competition'*.¹⁶⁸⁴ The Court then went on to analyse the objectives of the Directive in relation to potential distortions to competition across the EU as a whole, and within sub-sectors, as a result of a non-harmonised approach to the allocation of emission allowances, concluding that a harmonised sectorial approach is a 'concrete expression' of the objective of avoiding distortions of competition.¹⁶⁸⁵ Therefore, inclusion of a 'hardship' clause within the consideration of the allocation of free allowances would have amounted to the amending of an essential element

¹⁶⁷⁹ Case T- 630/13 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:T:2014:833

¹⁶⁸⁰ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

¹⁶⁸¹ *Ibid*, para 46-47

¹⁶⁸² Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179, para 121

¹⁶⁸³ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469, para 48

¹⁶⁸⁴ *Ibid*, para 49

¹⁶⁸⁵ *Ibid*, para 50-53

of the Emissions Trading Directive.¹⁶⁸⁶ On this basis the appeal was dismissed and harmonisation of allocation was regarded as essential to prevent distortions of competition and also potentially state aid in the process.

Following this judgement, three similar appeals were decided by reasoned order on 13 September 2016.¹⁶⁸⁷

The *DK Recycling*¹⁶⁸⁸ case demonstrates the need for clear criteria that flow from the EU level down to the national implementation of the renewables energy regulatory framework. The case further illustrates the potential for the distortion of competition in the same sector resulting from differing national implementations of the emissions trading scheme. The competence of the Commission in relation to the assessment of the national allocation plans is also confirmed and can thus be a harmonising factor.

The case once again illustrates the clear diagonal conflict between the EU-ETS and the Treaty provisions relating to state aid (Article 107 TFEU). The *DK Recycling* and the *Borealis Polyolefine*¹⁶⁸⁹ cases also illustrate that simply employing an auctioning or market-based Directive structure does not of itself remove distortions of competition and state aid in contravention of Article 107(1) TFEU – the detailed drafting and processes within the Directive need to be considered before a conclusion can be reached.¹⁶⁹⁰

3.6.4 Emissions Trading Conflicts with Polluter Pays Principle (Article 191(2) TFEU)

This section outlines the conflicts between the Emissions Trading Directive¹⁶⁹¹ and the ‘polluter pays’ principle as well as how relief from the principle can be regarded as state aid.

The ‘polluter pays principle’ is one of the cornerstones of international as well as EU environmental law.¹⁶⁹² The principle being articulated by the OECD in 1972 and 1974 as a means of allocating costs to encourage rational use of scarce environmental resources such that the costs of pollution are internalised by the

¹⁶⁸⁶ Ibid, para 55

¹⁶⁸⁷ Case C-551/14 *Arctic Paper Mochenwangen v Commission* ECLI:EU:C:2016:684; Case C-564/14 *Raffinerie Heide GmbH v Commission* ECLI:EU:C:2016:685; Case C-565/14 *Romonta v Commission* ECLI:EU:C:2016:698

¹⁶⁸⁸ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

¹⁶⁸⁹ Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311

¹⁶⁹⁰ Stefan Weishaar and Edwin Woerdman ‘Does Auctioning Emission Rights Avoid State Aid? Empirical Evidence from Germany’ (2012) 6(2) *Carbon & Climate Law Review*, 114, 115

¹⁶⁹¹ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L 275, 25.10.2003 the Directive was amended by Directive 2009/29 ‘To improve and extend the carbon emission trading scheme of the Community’ OJ L140/63

¹⁶⁹² Kleoniki Pouikli ‘The Polluter Pays Principle and the EU State Aid Law for Environmental Protection’ (2016) 55 *Journal of Law, Policy and Globalization*, 19, 19

polluter.¹⁶⁹³ Moreover, the polluter should bear the expense of carrying out the measures ‘*decided by public authorities to ensure that the environment is in an acceptable state*’.¹⁶⁹⁴ In terms of the EU primary legislation the principle is contained in Article 191(2)TFEU.

The ‘polluter pays’ principle is not defined in the Treaty, therefore member states are given discretion in assessing the polluter and the pollution.¹⁶⁹⁵ However, the CJEU has held that the undertaking which has contributed to the pollution¹⁶⁹⁶ and has led to the harm should be charged with its remediation.¹⁶⁹⁷ In assigning ‘harm’, the CJEU has held that the method should be sufficiently precise to show a direct effect,¹⁶⁹⁸ a matter that can easily be determined for a coal or gas fuelled power station by measurement of the constituent gases of the combustion¹⁶⁹⁹ by-products in the flue.¹⁷⁰⁰ In any event the CJEU has stated that the costs attributed to the polluter should be those related to the cost of elimination of the waste¹⁷⁰¹ and the environmental damage the polluter has caused.¹⁷⁰²

The *Estonia*,¹⁷⁰³ *Borealis Polyolefine*¹⁷⁰⁴ and *DK Recycling*¹⁷⁰⁵ cases have all shown the historic and ongoing nature of allocating emissions allowances for free in accordance with the Emissions Trading Directive. Therefore, by the very nature of being in receipt of free emission allowances the polluter has failed to pay and in addition emissions trading allows the wealthy to evade their responsibilities to fully abate their emission.¹⁷⁰⁶ Also by the practice of over allocation of emission

¹⁶⁹³ Muhammad Munir, ‘History and Evolution of the Polluter Pays Principle: How an economic idea became a legal principle?’ (2013) Social Science Research Network

¹⁶⁹⁴ OECD ‘The Polluter Pays Principle: Definition, Analysis, Implementation’ [1975] OCED Publishing, 117, 12

¹⁶⁹⁵ Kleoniki Pouikli ‘The Polluter Pays Principle and the EU State Aid Law for Environmental Protection’ (2016) 55 Journal of Law, Policy and Globalization, 19, 21

¹⁶⁹⁶ Case C-254/08 *Futura Immobiliare srl Hotel Futura v Comune di Casoria* ECLI:EU:C:2009:479, para 45; See Also Case C-378/08 *Raffinerie Mediterranee (ERG) SpA, Polimeri Europa SpA and Syndial SpA v Ministero dello Sviluppo economico* ECLI:EU:C:2010:126, paras 57 and 67

¹⁶⁹⁷ Case C-1/03 *Ministère public v Paul van de Walle* ECLI:EU:C:2004:67, para 60

¹⁶⁹⁸ Case C-97/11 *Amia SpA, in liquidation v Provincia Regionale di Palermo* ECLI:EU:C:2012:306, paras 35 and 37

¹⁶⁹⁹ Combustion (burning), is a high-temperature exothermic chemical reaction between a fuel and oxygen (usually from air), that produces oxidised gaseous products and some particulates (soot), in a mixture termed as smoke - Klaus Schmidt-Rohr, ‘Why Combustions Are Always Exothermic, Yielding About 418 kJ per Mole of O₂’ (2015) 92(12) Journal of Chemical Education, 2094

¹⁷⁰⁰ Timo Korpela, Tomas Björkqvist, Yrjö Majanne and Pentti Lautala ‘Online monitoring of flue gas emissions in power plants having multiple fuels’ (2014) 47(3) International Federation of Automatic Control, 1355

¹⁷⁰¹ Case C-1/03 *Ministère public v Paul van de Walle* ECLI:EU:C:2004:67, para 42-53 ; See Also Case C-188/07 *Commune de Mesquer v Total France SA and Total International Ltd* ECLI:EU:C:2008:359 par 49-63 ; For an introduction to the issue of energy waste management, see Raphael Heffron and Kim Talus. ‘The evolution of energy law and energy jurisprudence: Insights for energy analysts and researchers’ (2016) 19 Energy Research & Social Science 1

¹⁷⁰² Case C-254/08 *Futura Immobiliare srl Hotel Futura v Comune di Casoria* ECLI:EU:C:2009:479, para 64-67; See also Case C-293/97 *R v Secretary of State for the Environment and Ministry of Agriculture, Fisheries and Food, exp Standley and Metson* ECLI:EU:C:1999:215 para 51-52

¹⁷⁰³ Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

¹⁷⁰⁴ Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311

¹⁷⁰⁵ Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

¹⁷⁰⁶ Simon Caney and Cameron Hepburn, ‘Carbon trading: unethical, unjust and ineffective?’ [2011] Grantham Research Institute on Climate Change and the Environment Working Paper No. 49

allowances, the price within the emissions market has been seen to be well below the cost of emissions abatement. Therefore, on a series of counts the polluter has failed to pay costs related to the elimination of the waste or the environmental damage incurred. Thus, the conclusion can be reached that the EU-ETS conflicts with the 'polluter pays' principle.

As outlined by Advocate General Jacobs, '*a given measure will constitute State aid where it relieves those liable under the 'polluter pays' principle from their primary responsibility to bear the costs*'.¹⁷⁰⁷ Without referring to this environmental principle, the Court ruled that the disposal of waste had to be '*considered to be an inherent cost*'¹⁷⁰⁸ of the undertakings in question. As a result, an advantage was granted to these undertakings and thus state aid. Hence it can be argued that failure to enforce the 'polluter pays' principle for coal and gas fuelled electricity generating facilities is also a form of state aid, or a hidden subsidy.¹⁷⁰⁹

Lastly it could be said that emissions trading is morally objectionable, because it 'commodifies'¹⁷¹⁰ the atmosphere and is thus potentially unethical.¹⁷¹¹

3.6.5 Summary of Conflicts between Emission Trading Directive & EU Free Trade Principles

As set out above, the EU-ETS which is established in accordance with the Article 191(1) TFEU is in diagonal conflict (See Section 1.2) with the state aid and vertical conflict with the 'polluter pays' principle. The findings in relation to these conflicts are outlined below.

State Aid

The EU-ETS¹⁷¹² as a market based instrument had the ability to form a harmonised, EU-wide trading platform for emissions. However, during the EU-ETS's initial two trading periods the vast majority of the allowances were issued for free and also

¹⁷⁰⁷ Opinion of Advocate General Jacobs Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2002:273, para 69

¹⁷⁰⁸ Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622, para. 31. AG Jacobs had considered that 'the provision free of charge of a collection and disposal service for dangerous animal waste [was relieving the] ... farmers and slaughterhouses of an economic burden which would normally, in accordance with the polluter-pays principle, have to be borne by those undertakings'. See Opinion AG Jacobs in Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2002:273, para. 64).

¹⁷⁰⁹ Benjamin Sovacool, 'Reviewing, Reforming, and Rethinking Global Energy Subsidies: Towards a Political Economy Research Agenda' (2017) 135 *Ecological Economics*, 150; Also on energy subsidies in general see Angus Johnston, Raphael Heffron and Darren McCauley, 'Rethinking the scope and necessity of energy subsidies in the United Kingdom' (2014) 3 *Energy Research & Social Science*, 1

¹⁷¹⁰ Jonathan Aldred 'The Ethics of Emissions Trading' (2012) 17(3) *New Political Economy*; See also Edward Page 'The hidden costs of carbon commodification: emissions trading, political legitimacy and procedural justice' (2012) 19(5) *Democratization*, 932

¹⁷¹¹ Edward Page *Ethics of Emissions Trading* (Wiley, 2013)

¹⁷¹² Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

certain member states over allocated the allowances to provide an economic cushion to the imposition of the emissions allowance system. The allocation of the allowances for free or below the market price, is distortive to competition as it confers an advantage on the undertakings to which the allowances were allocated in diagonal conflict with Article 107(1) TFEU – state aid. Similarly, the over allocation of allowances conflicts with the state aid provisions of the Treaty (Article 107(1) TFEU), as the undertakings to which allowances were over allocated were given an advantage, in that the practice favoured these undertakings compared to others.

Polluter Pays

It is argued that the ‘polluter pays’ principle is a mandatory requirement contained in Article 191(2) TFEU. Therefore, any instrument of secondary EU legislation which provides a means of not complying with the ‘polluter pays’ principle conflicts with the Article 191(2) TFEU. The analysis undertaken above shows that the EU-ETS conflicts with the ‘polluter pays’ principle and thus Article 191(2) TFEU. Additionally, the EU-ETS has been shown to conflict with the previous judgements of the CJEU.

3.7 Conclusion

An individual analysis of the conflicts related to each of the two Directives has been given in Sections 3.5.14 (Renewable Energy Directive)¹⁷¹³ and 3.6.5 (Emissions Trading Directive)¹⁷¹⁴ and as such will not be repeated here.

The use of the *lex specialis* approach seems to be consistently applied by the CJEU, however, as we will see from the empirical findings, practitioners within the sector are concerned with the longevity of this approach, given that the CJEU once held¹⁷¹⁵ that any kind of measure put in place by the Commission must not be contrary to the specific provisions of the Treaty, in particular free movement of goods or state aid.

The CJEU could thus be seen to be following a Dworkin constructive approach to interpretation looking at political or moral concerns, related to climate change.¹⁷¹⁶

¹⁷¹³ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹⁷¹⁴ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 ‘To improve and extend the carbon emission trading scheme of the Community’ OJ L140/63

¹⁷¹⁵ Case C-225 *Matra v Commission* ECLI:EU:C:1993:239, para 41

¹⁷¹⁶ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

The analysis of the diagonal and vertical conflicts between the Renewable Energy Directive, the Emissions Trading Directive and Treaty based EU free trade principles shows that conflicts are found in the areas of free movement, state aid (by conferring a price and revenue advantage, thus distorting competition) and the 'polluter pays' principle.

The Renewable Energy Directive is shown to be in diagonal conflict with a greater number of areas of the TFEU than the Emissions Trading Directive. However, this could be in no small part due to the nationally focussed nature of the renewables support schemes put in place and the need to obtain unanimity of voting in the EU Council at its adoption, and as such it tries to be all things to all people.

As set out in the empirical research (especially the Developer Operators of renewable facilities) these conflicts create regulatory and business risks, such as uncertain investment returns and the potential early closure of generating facilities. This perception of regulatory risk brought about reluctance to invest in new renewable electricity facilities, thus undermining the EU's objective of climate change mitigation.

Chapter 4 – Findings from Empirical Research

4.1 Introduction to Empirical Research Phase

Empirical research was undertaken to gain an understanding of the complex phenomena¹⁷¹⁷ present in the EU's electricity market.

This research builds on other empirical investigations of the renewable sector. This research differentiates itself from other studies which looked at the electricity sector generally,¹⁷¹⁸ or how investment decisions are made in the renewables sector,¹⁷¹⁹ what behavioural factors are important,¹⁷²⁰ or have used both industry and non-industry interviews,¹⁷²¹ by focusing on the conflict between the renewables regulatory framework and the EU's free trade principles.

The empirical research looks to highlight the constructivist ontological position of industry players as they search for the meaning that allows them to make sense of the European renewables sector and shape developments rather than having events shape them.¹⁷²²

As has been set out in case law examples¹⁷²³ in Chapter 3, renewable electricity has been granted a 'special status'¹⁷²⁴ having been brought within an extension of the exception from the application of free movement rules contained in Article 36 TFEU, as well as having been provided with a derogation from practices which would distort competition and other anti-state aid provisions also contained in TFEU.¹⁷²⁵ This special status thus places the renewables regulatory framework in diagonal conflict with EU primary law, which was an issue raised by the respondents as creating regulatory uncertainty and therefore risk.

This empirical chapter presents the views of market participants¹⁷²⁶ as to the form of renewable electricity's 'special status' and how it affects their role within the industry. Additionally, the empirical research phase was designed to elucidate market participants' views on the robustness (long-term legal sustainability) of the

¹⁷¹⁷ Norman Denzin and Yvonna Lincoln *Handbook of Qualitative Research* (5th edn, Sage, 2018)

¹⁷¹⁸ Gregor Kungl and Frank Geels, 'The Destabilisation of the German Electricity Industry (1998-2015): Application and Extension of a Multi-dimensional Framework' [2016] SOI Discussion Paper 2016-02 – including 22 interviews, considering all industry sectors not just renewables

¹⁷¹⁹ Anna Bergek, Ingrid Mignon and Gunnel Sundberg, 'Who invests in renewable electricity production? Empirical evidence and suggestions for further research' (2013) 56 Energy Policy, 568

¹⁷²⁰ Andrea Masini and Emanuela Menichetti, 'The impact of behavioural factors in the renewable energy investment decision making process: Conceptual frame work and empirical findings' (2012) 40 Energy Policy, 28

¹⁷²¹ Ingrid Mignon and Anna Bergek, 'Investments in renewable electricity production: The importance of policy revisited' (2016) 88 Renewable Energy, 307

¹⁷²² Sotirios Sarantakos *Social Research* (Palgrave Macmillan, 2005)

¹⁷²³ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80

¹⁷²⁴ Geert van Calster, 'Climate Change and Renewable Energy as a Super Trump for EU Trade Law However all Essent clear' (2014) 1 2014 Renewable Energy Law & Policy Review, 60

¹⁷²⁵ Catherine Barnard, *The Substantive Law of the EU: The Four Freedoms*, (Oxford University Press 2007)

¹⁷²⁶ M Sandelowski, 'Using qualitative research' (2004) 14 Qualitative Health Research, 1366

renewables regulatory framework due to the conflicts between it and EU free trade principles.

The doctrinal research in Chapters 2 and 3 has illustrated the nature of the conflicts between the renewable electricity regulatory framework and EU free trade principles. These conflicts being diagonal in nature as the secondary legislation (Directives forming the framework) prevents the implementation of free movement of goods, facilitates the granting of revenue enhancements (renewables ‘support schemes’) which, when not designed properly, has been found to be state aid. The regulatory framework is also found to be in vertical conflict with principles such as the ‘polluter pays’ and horizontal conflict between itself due to the lack of a feedback loop between the Energy Efficiency Directive and the EU-ETS. Although the doctrinal research can set out and analyse these issues, it cannot give any understanding as to the importance to market participants of these issues and how they affect the way the industry operates.

Therefore, this research project seeks to use empirical research to contribute to knowledge by setting out the importance of the conflicts outlined to market operators and how they seek to mitigate the risk these conflicts represent.

The research will assist legislators and regulators (both national and European) by setting out the effects of regulatory volatility due to lack of regulatory change forecastability, as seen by renewables project developers and financiers, looking at the mitigation measures they put in place to manage this risk. This element of the research will also assist project developers to gain an understanding of these issues before entering the renewables market.

The empirical research consisted of qualitative semi-structured interviews with 16 business directors, managers and company general counsel over 22 interviews.¹⁷²⁷ The data obtained was analysed using a thematic¹⁷²⁸ approach. Respondents of this type would normally be difficult to access and therefore the industry knowledge and contacts of the researcher facilitated the access adding value to the empirical phase of the research.

¹⁷²⁷ William Harvey, ‘Strategies for Conducting Elite Interviews’ (2011) 11(4) *Qualitative Research*, 431; See Also Joseph Hair, Arthur Money, Phillip Samouel and Mike Page *Research Methods for Business* (Wiley, 2007), 295

¹⁷²⁸ David Silverman *Interpreting Qualitative Data* (SAGE, 2014); See Also Lorelli Nowell, Jill Norris, Deborah White and Nancy Moules, ‘Thematic Analysis: Striving to Meet the Trustworthiness Criteria’ (2017) 16(1) *International Journal of Qualitative Methods*; See also Moira Maguire and Brid Delahunt, ‘Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars’ (2017) 8(3) *All Ireland Journal of Teaching and Learning in Higher Education*

4.2 Process for Conducting Empirical Research

Following consideration of potential techniques (e.g. archival, surveys, focus groups or ethnography)¹⁷²⁹ empirical research was undertaken using semi-structured interviews,¹⁷³⁰ as the technique allows the development and understanding of the themes¹⁷³¹ which emerge as concerns with the renewables regulatory framework. The themes developed, capture important findings contained in the data in relation to the research question, and represent a level of response pattern or meaning within the data.¹⁷³²

The semi-structured interview technique was selected over a simple questionnaire as the interviews were more likely to gain industry insights as interactive follow-up questions could be asked.¹⁷³³ Additionally, this technique was chosen as it allowed the collection of views from market operators on similar topics whilst allowing room to pursue topics of particular interest or expertise of the respondent,¹⁷³⁴ as well as the development of additional or complementary issues,¹⁷³⁵ encouraging depth and vitality.¹⁷³⁶ The interviews also provided a contextual account of the respondent's experiences and a means of exploring wider views.¹⁷³⁷

The interviews were conducted with persons who have (i) specialist technical knowledge to implement policy, (ii) are able to advise on policy, or (iii) are in the position of authority such that they can determine policy (together considered as an 'elite').¹⁷³⁸

¹⁷²⁹ Dvora Yanow and Peregrine Schwartz-Shea *Interpretation and Method: Empirical Research Methods and the Interpretive Turn* (Routledge, 2014); See also Alan Bryman *Social Research Methods* (Oxford University Press, 2012)

¹⁷³⁰ Robert Yin *Case study research: design and methods* (2nd ed., Sage, 1994)

¹⁷³¹ A theme being defined as a coherent synthesis of the data that constitute a finding – M Sandelowski and J Leeman, 'Writing usable qualitative health research findings' (2012) 22 *Qualitative Health Research*, 1404

¹⁷³² Liam McHugh-Russell, 'Qualitative Methods for Law and Society Research—An EUI Research Guide' [2016] University of Edinburgh Working Paper; See Also Liz Spencer, Jane Ritchie and William O'Connor, 'Analysis: Practices, principles and processes' in Jane Ritchie and Jane Lewis (eds), *Qualitative Research Practice: A Guide for Social Sciences Students and Researchers* (1st edn. Sage, 2003), 199; See Also Michael Bloor and Fiona Wood, *Keywords in Qualitative Methods: A Vocabulary of Research Concepts* (1st edn, SAGE, 2006); See Also Virginia Braun and Victoria Clarke, 'Using thematic analysis in psychology' (2006) 3(2) *Qualitative Research in Psychology*, 77; David Silverman *Interpreting Qualitative Data* (SAGE, 2014)

¹⁷³³ Martyn Hammersley and Paul Atkinson *Ethnography: Principles in Practice* (3rd ed, Routledge, 2007)

¹⁷³⁴ Herbert Rubin and Irene Rubin Keeping on Target while Hanging Loose Designing Qualitative Interviews in Herbert Rubin and Irene Rubin (eds) *Qualitative Interviewing: the Art of Hearing Data* (SAGE, 1995); See Also Alan Bryman *Social Research Methods* (4th Ed, Oxford University Press, 2012), 471; See Also Reza Banakar, 'On the Paradox of Contextualisation', in Reza Banakar (ed.), *Normativity in Legal Sociology: Methodological Reflections on Law and Regulation in Late Modernity* (Springer, 2014), 91; Robin Leidner *Fast Food, Fast Talk Service Work and the Routinization of Everyday Life* (University of California Press, 1993), 238

¹⁷³⁵ Alan Beardsworth and Teresa Keil, 'The vegetarian option: varieties, conversions, motives and careers' (1992) 40(2) *The Sociological Review*, 253

¹⁷³⁶ Christine Dearnley, 'A reflection on the use of semi-structured interviews' (2005) 13(1) *Nurse Researcher*, 19

¹⁷³⁷ H Sommerland 'Researching and Theorising the Processes of Professional Identity Formation' (2007) 34(2) *Journal of Law of Society*, 190; See also Owen Doody and Maria Noonan, 'Preparing and conducting interviews to collect data' (2013) 20(5) *Nurse Researcher* 28

¹⁷³⁸ William Harvey, 'Strategies for conducting elite interviews' (2011) 11(4) *Qualitative Research*, 431, 433; See also Ursula Plesner, 'Studying sideways: Displacing the problem of power in research interviews with sociologists and journalists' (2011) 17(6) *Qualitative Inquiry*, 471, 473

Traditional concerns with regards to the viability of empirical research via elites focus on access and the willingness of respondents to openly discuss issues¹⁷³⁹ and to go beyond the 'official line'.¹⁷⁴⁰ However, due to the industrial position of the researcher,¹⁷⁴¹ access issues were overcome and based on known contact details, hence so called 'gate keeper' issues were also avoided.¹⁷⁴² Additionally the market knowledge of the researcher assisted in building a rapport¹⁷⁴³ with the respondents leading to full and frank disclosure.¹⁷⁴⁴

Respondents were invited for interview on the basis of providing a stratified approach to the market by seeking interviews with those from different sections of the market as described above – so called 'purposeful sampling'.¹⁷⁴⁵ In order to overcome the criticism of such selection methods,¹⁷⁴⁶ that respondents are in reality invited purely because of previous contact with the researcher and as such are not representative, a general invitation was issued at a post experience energy sector conference¹⁷⁴⁷ and another general invitation was issued via 'LinkedIn'.¹⁷⁴⁸ The 16 respondents were obtained via all of the contact and invitation channels (the majority from direct contact with the researcher) and were from the UK, Germany and France, giving a perspective based on their host country as well as of wider EU regulatory issues. In seeking respondents, there was no targeting of these countries as part of the research: a simple case of persons accepting one of the invitation channels.

¹⁷³⁹ Peter Burnham, Karin Gill Lutz, Wyn Grant and Zig Layton-Henry *Elite Interviewing* (Palgrave Macmillan, 2008); Jeffery Berry, 'Validity and Reliability Issues in Elite Interviewing' (2002) 35(4) *Political Science and Politics*, 679; Catherine Marshall, 'Elites, Bureaucrats, Ostriches, and Pussycats: Managing Research in Policy Settings' (1984) 15(3) *Anthropology and Education Quarterly*, 235; Linda McDowell, 'Elites in the City of London: some methodological considerations' (1998) 30 *Environment and Planning*, 2133

¹⁷⁴⁰ Karen Duke, 'Getting beyond the 'Official Line': Reflections on dilemmas of access, knowledge and power in researching policy networks' (2002) 31(1) *Journal of Social Policy*, 39

¹⁷⁴¹ The researcher was at all times during the research a manager within EDF Renewables offshore wind construction division

¹⁷⁴² William Harvey, 'Strategies for conducting elite interviews' (2011) 11(4) *Qualitative Research*, 431; See also Catherine Welch, Rebecca Marschan-Piekkari, Heli Penttinen and Marja Tahvanainen, 'Corporate Elites as Informants in Qualitative International Business Research' (2002) 11(5) *International Business Review*, 611; Robert Thomas, 'Interviewing Important People in Big Companies' in Rosanna Hertz and Jonathan Imber (eds.) *Studying elites using qualitative methods* (SAGE, 1995), 3-17

¹⁷⁴³ Carla Willig *Introducing Qualitative Research in Psychology Adventures in Theory and Method* (Open University Press, 2001)

¹⁷⁴⁴ Catherine Welch, Rebecca Marschan-Piekkari, Heli Penttinen and Marja Tahvanainen 'Corporate elites as informants in qualitative international business research' (2002) 11(5) *International Business Review*, 611

¹⁷⁴⁵ Michael Patton *Qualitative Research and Evaluation Methods* (3rd edn, Sage, 2002), 45

¹⁷⁴⁶ Thomas Diefenbach, 'Are case studies more than sophisticated storytelling?: Methodological problems of qualitative empirical research mainly based on semi-structured interviews' (2009) 43(6) *Quality and Quantity*, 876, 879; See Also David Wainwright, 'Can sociological research be qualitative, critical and valid?' (1997) 3(2) *Qualitative Report*; See Also Rosaline Barbour, 'The newfound credibility of qualitative research? Tales of technical essentialism and co-option' (2003) 13(7) *Qualitative Health Research*, 1019, 1021

¹⁷⁴⁷ Global EPC Contract and Risk Management Conference (London / 12-13 OCT 2017)

¹⁷⁴⁸ Robert Yin *Case Study Research: Design and Methods* (5th edn SAGE, 2014), 59; See Also Bent Flyvbjerg, 'Case study', in Norman Denzin and Yvonna Lincoln (eds.) *The Sage Handbook of Qualitative Research* (SAGE, 2011), 301, 302; See Also John Gerring, 'What is a case study and what is it good for?', (2004) 98(2) *The American Political Science Review*, 341

Prior to contact being made with potential respondents, template questions were developed,¹⁷⁴⁹ to allow consistent information to be obtained, facilitating comparison between the findings from the various market operators. In seeking an insight into how important the respondents' viewed the findings of the doctrinal phase of the research the empirical questions ask respondents to outline (i) the regulatory framework, (ii) their perception of the legal conflicts outlined above, (iii) what respondents regard as the most important regulatory issues, (iv) what mitigation techniques are used to minimise the effect of the regulatory issues outlined, and (v) their understanding of the future path for the electricity regulatory framework.¹⁷⁵⁰

The respondents were provided with an ethics approved information sheet (dealing with anonymity¹⁷⁵¹ and confidentiality)¹⁷⁵² and a consent form prior to interview. The consent of the respondents was also confirmed verbally at the time of the interview.¹⁷⁵³

The interviews were conducted using the template questions developed, with the answers from the respondents spurring follow up question.¹⁷⁵⁴ The primary and secondary responses were subjected to thematic analysis.¹⁷⁵⁵

Additionally, some 'citing' from earlier interviews, on an anonymous basis was used to establish credibility and to allow cross-checking of data received.¹⁷⁵⁶ Also follow up interviews were undertaken with certain respondents to gain additional information following the raising of themes by other respondents, for example the closure of thermal generating facilities causing the need to import from other member states the very form of electricity that had just been decommissioned (Theme 1.2). Thus, although there were 16 respondents within the empirical research there were actually 22 interviews.

¹⁷⁴⁹ Nigel King, 'Using templates in the thematic analysis of text', in Catherine Cassell and Gillian Symon (eds.), *Essential guide to qualitative methods in organizational research* (SAGE, 2004) 427

¹⁷⁵⁰ The questions followed the 9 question framework – introducing, probing, follow-up, specifying, direct, indirect, structural, interpreting and silence – Sven Brinkmann and Steinar Kvale *InterViews: An Introduction to Qualitative Research Interviewing* (3rd ed SAGE, 2015); as well as Kathy Charmaz 'Constructionism and the Grounded Theory Method' in Jaber Gubrium, James Holstein (eds.) *Handbook of Interview Research: Context and Method*, (Sage, 2002), 397

¹⁷⁵¹ Annukka Vainio, 'Beyond research ethics: Anonymity as 'ontology', 'analysis' and 'independence'' (2013) 13(6) *Qualitative Research*, 685

¹⁷⁵² Kari Lancaster, 'Confidentiality, anonymity and power relations in elite interviewing: conducting qualitative policy research in a politicised domain' (2017) 20(1) *International Journal of Social Research Methodology*, 93

¹⁷⁵³ Lorelli Nowell, Jill Norris, Deborah White and Nancy Moules, 'Thematic Analysis: Striving to Meet the Trustworthiness Criteria' (2017) 16(1) *International Journal of Qualitative Methods*

¹⁷⁵⁴ William Harvey, 'Strategies for Conducting Elite Interviews' (2011) 11(4) *Qualitative Research*, 431

¹⁷⁵⁵ David Silverman *Interpreting Qualitative Data* (SAGE, 2014)

¹⁷⁵⁶ D Richards, 'Elite Interviewing: Approaches and Pitfalls' (1996) 16(3) *Politics*, 199, 203

Following the interviews, the research notes were developed into a transcript. The transcripts do not capture every detail of the verbal data (e.g. intonation and laughter) as this was not important in progressing the research.¹⁷⁵⁷

As stated, the transcripts were analysed using a thematic approach.¹⁷⁵⁸ This approach was chosen as it can produce ‘trustworthy and insightful findings’ as well as examining the perspectives of the respondents, highlighting ‘similarities and differences’.¹⁷⁵⁹

The first step in the analysis was to code¹⁷⁶⁰ the data.¹⁷⁶¹ During the coding process important sections of the text were ascribed labels to index the data for future grouping into themes.¹⁷⁶² The analysis of the data was undertaken using a predominantly exploratory approach, focussed around content driven analysis, seeking codes and themes which were not predetermined.¹⁷⁶³

Following an initial analysis of the potential codes, codes were defined to have explicit boundaries, ensuring overlaps were eliminated and gaps closed.¹⁷⁶⁴ The final coding scheme and definitions can be found in Annex 6.

Points raised by respondents that departed from the dominant theme were not ignored as outliers in the coding process, as these responses gave significant insight to the breadth of undertakings and respondents within the electricity market.¹⁷⁶⁵ The data was subjected to a deductive analysis, as this is driven by the research’s analytic focus and provides a more detailed analysis of data.¹⁷⁶⁶ However, in order to maintain the descriptive richness of the data, a substantial number of quotes are used from the respondents.¹⁷⁶⁷

Use of coding or thematic analysis software (e.g. NVivo) was not considered appropriate in this research as the data set was not unmanageably large and such

¹⁷⁵⁷ Virginia Braun and Victoria Clarke, ‘Using thematic analysis in psychology’ (2006) 3(2) *Qualitative Research in Psychology*, 77

¹⁷⁵⁸ Lisa Webley, ‘Qualitative Approaches to Empirical Legal Research’ in Peter Cane and Herbert Kritzer (eds) *The Oxford Handbook of Empirical Legal Research* (Oxford University Press, 2010), 926

¹⁷⁵⁹ Virginia Braun and Victoria Clarke, ‘Using thematic analysis in psychology’ (2006) 3(2) *Qualitative Research in Psychology*, 77

¹⁷⁶⁰ Coding is an analysis process whereby the transcripts of the interviews are broken down by phrase, verb or noun and by so doing labelling it (a ‘code’) and grouping these parts into a more meaningful expression which can be developed into a theme or finding. Code is a tag or label to give meaningful expression to a parcel of text – developed from Matthew Miles and Michael Huberman *Qualitative Data Analysis* (SAGE, 1994)

¹⁷⁶¹ Qualitative coding is a process of reflection on the data and is the first step in understanding what themes the data brings out – J Savage, ‘One voice, different tunes: Issues raised by dual analysis of a segment of qualitative data’ (2000) 31(6) *Journal of Advanced Nursing*, 1493

¹⁷⁶² N King, ‘Using templates in the thematic analysis of text’ in C Cassell and G Symon (eds) *Essential guide to qualitative methods in organizational research* (SAGE, 2004), 257

¹⁷⁶³ Greg Guest, Kathleen MacQueen and Emily Namey *Applied Thematic Analysis* (SAGE, 2012) 52

¹⁷⁶⁴ Johnny Saldaña *The Coding Manual for Qualitative Researchers* (3rd ed SAGE, 2015); See Also John Creswell *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed Sage, 2014); Also Jennifer Attride-Stirling, ‘Thematic networks: An analytic tool for qualitative research’ (2001) 1(3) *Qualitative Research*, 385

¹⁷⁶⁵ Virginia Braun and Victoria Clarke, ‘Using thematic analysis in psychology’ (2006) 3(2) *Qualitative Research in Psychology*, 77

¹⁷⁶⁶ *Ibid*

¹⁷⁶⁷ *Ibid*; See Also N King, ‘Using templates in the thematic analysis of text’ in C Cassell and G Symon (eds) *Essential guide to qualitative methods in organizational research* (SAGE, 2004), 257

software is not capable of the conceptualising processes to transform the data or make critical judgement.¹⁷⁶⁸ Additionally, respondents used different terms to explain the same issue, which could not be robustly analysed by the software and as such a series of different codes would be generated which would need to be reconciled manually.¹⁷⁶⁹

The codes were then organised into themes by using a ‘thematic map’,¹⁷⁷⁰ which was reorganised on several occasions to reflect the themes stemming from the theoretical findings, as well as unexpected themes derived from the interviews.¹⁷⁷¹ Prior to final use, the themes were assessed for internal homogeneity and external heterogeneity.¹⁷⁷²

4.3 Sample Size and Saturation of Research Findings

In seeking to determine the appropriate sample size, the concept of ‘saturation’ was relied upon, this being the point at which no new information or themes are observed in the data.¹⁷⁷³ Equally, care was taken to ensure the sample was not too large, making analysis difficult.¹⁷⁷⁴

As stated, the empirical research was conducted within a sample that can be described as ‘elite’. It has also been demonstrated that for interview research amongst ‘elite’ populations saturation can occur within a data set of only twelve interviews, with basic elements of meta-themes being present with as few as six interviews.¹⁷⁷⁵ As such, by 12 interviews, 88% of all emergent themes had been developed, and 97% of all important themes were developed; therefore, the codebook structure had stabilised by 12 interviews with few changes or additions thereafter the nature of the information provided and sample size allowed the

¹⁷⁶⁸ Lorelli Nowell, Jill Norris, Deborah White and Nancy Moules, ‘Thematic Analysis: Striving to Meet the Trustworthiness Criteria’ (2017) 16(1) International Journal of Qualitative Methods; See also N King, ‘Using templates in the thematic analysis of text’ in C Cassell and G Symon (eds) *Essential guide to qualitative methods in organizational research* (SAGE, 2004), 257; Also Virginia Braun and Victoria Clarke, ‘Using thematic analysis in psychology’ (2006) 3(2) Qualitative Research in Psychology, 77

¹⁷⁶⁹ David Snow, Leon Anderson, John Lofland and Lyn Lofland *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis* (4th Ed Wadsworth, 2005)

¹⁷⁷⁰ Stephen Stehman and Raymond Czaplowski, ‘Design and Analysis for Thematic Map Accuracy Assessment: Fundamental Principles’ (1998) 64(3) Remote Sensing of Environment, 331

¹⁷⁷¹ Liz Spencer, Jane Ritchie, Jane Lewis and Lucy Dillon, ‘Quality in Qualitative Evaluation: A framework for assessing research evidence’ [2003] National Centre for Social Research

¹⁷⁷² Michael Patton *Qualitative research and evaluation methods* (SAGE, 2002)

¹⁷⁷³ Sarah Baker and Rosalind Edwards, ‘How many qualitative interviews is enough’ (2012) Discussion Paper NCRM; See Also Steward Oppong, ‘The problem of sampling in qualitative research’ (2013) 2(2) Asian Journal of Management Science and Education, 202; See also P DePaulo, ‘How large should the sample size be in a qualitative study?’ (2002) DePaulo Research Consulting <http://www.quirks.com/articles/a2000/20001202.aspx?searchID=383113850>

¹⁷⁷⁴ A Onweugbuzie and K Collins, ‘A Typology of Mixed Method Sampling Designs in Social Sciences Research’ (2007) 12 The Qualitative Report, 281

¹⁷⁷⁵ Greg Guest, Arwen Bunce and Laura Johnson, ‘How Many Interviews Are Enough? An Experiment with Data Saturation and Variability’ (2006) 18(1) Field Methods, 59

research to deem the saturation criterion satisfied.¹⁷⁷⁶ In considering more widely sample size and saturation a review considered 54 studies, finding that the ‘average sample size was 19.3, and this fell to 13.2 when separated into the population-representing groups’ was taken into account, additionally the review found that within the 54 studies the modal size was actually between 11 and 15 interviews.¹⁷⁷⁷

Therefore, in this study, using a largely homogeneous group based on knowledge and experience criteria, which can be considered an analogous criterion to elite interviews in the European electricity sector, forty-four of the forty-five thematic codes had emerged after fifteen interviews.¹⁷⁷⁸

In determining data saturation, a numerical method was used (the details of which are set out in Annex 8). The method thus set out shows that for elite groups a sample of 16 will give over 80% confidence that should any additional themes emerge the view will be held by only 1 in 10 of the renewable electricity sector’s managers.¹⁷⁷⁹ If the number of interviews is used as the marker, it can be seen that, broadly 90% confidence can be gained should any additional themes emerge the view will be held by less than 1 in 10 of the renewable electricity sector’s managers. This method therefore shows that the 16 respondents and the 22 interviews held in this study is an appropriate number to gain meaningful thematic saturation.

4.4 Respondents by Categories & Data Management Issues

The table below presents the different respondents categorised by experience type. The categorisation into experience types was undertaken post data collection and is done to simply give a better understanding of the nature of the respondents’ experience and their function type. All respondents were either senior managers or directors within their respective organisations. The organisations cover commercial developers and operators of renewable electricity facilities, regulators, both internal and external legal counsel to developer and operator organisations, as well as an investment fund manager, an insurance provider and a climate scientist. The table also outlines how this experience helps to elucidate the research issues.

To retain the anonymity of respondents they are simply referred to as Developer Operator 1 or External Legal Counsel 1 as appropriate.

¹⁷⁷⁶ Ibid

¹⁷⁷⁷ Ray Galvin, ‘How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?’ (2015) 1 Journal of Building Engineering, 2,4

¹⁷⁷⁸ Monique Hennink, Bonnie Kaiser and Vincent Marconi, ‘Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough?’ (2016) 27(4) Qualitative Health Research, 591

¹⁷⁷⁹ Ray Galvin, ‘How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?’ (2015) 1 Journal of Building Engineering, 2,2

Title	Number	Details	Reason for Approaching Respondent Type
Developer Operator	7	Respondents who currently work for companies that develop and operate renewable electricity facilities. The respondents are able to take business decisions in relation to the development and operation of the assets in question rather than being in advisory roles such as Internal Legal Counsel who would provide legal and regulatory advice	<p>When taking business investment or operational decisions this type of respondent is charged with assessing regulatory risk and the robustness of the asset business plan.</p> <p>Therefore, they will assess if the conflicts between the renewables regulatory framework and wider EU free trade principles are likely to remain and thus maintain asset revenues.</p>
Investment Fund Manager	1	Respondent who currently works for an investment fund. As an organisation the investment fund will make investments in renewable energy facilities without necessarily developing or operating the facilities	<p>This type of respondent gives a purely investment focussed view of renewable assets. The respondent can set out how the risks and uncertainties present in the renewable sector feed through into asset values (cost of purchase or sale).</p> <p>Examples of such organisations are Macquarie Renewables, Greencoat Capital, or Dalmore Capital who paid £701m for 49% of EDF Renewables UK wind farm</p>

			portfolio on 29 June 2018 ¹⁷⁸⁰
Regulators	1	Respondent who currently works for a regulator.	<p>Regulators are public bodies usually set up by statute and are the implementers of EU and national policy and as such are key to achieving policy goals.</p> <p>A UK example would be the Office of Gas and Electricity Markets (Ofgem) or in Germany the network regulator the Bundesnetzagentur</p>
Internal Legal Counsel	2	Respondents who currently work for companies that develop and operate renewable electricity facilities. The respondents hold the position of internal lawyer and as such would provide legal and regulatory advice	Internal Legal Counsel is a key part of the risk advisory team used by Developer Operators in reaching business decisions. Such persons are also key implementers of the regulatory framework within any company
External Legal Counsel	3	Are respondents who currently work for law firms providing legal and regulatory advice to market participants	External Legal Counsel is part of the risk advisory team used by Developer Operators in reaching business decisions.

¹⁷⁸⁰ <https://www.edfenergy.com/media-centre/news-releases/edf-renewables-signs-new-partnership-twenty-four-uk-wind-farms>

Insurance Provider	1	Respondent who operates in the insurance market, providing insurance products to the renewable energy sector	Insurance providers develop and implement business risk mitigation products. They also price risk via insurance premiums and are a key indicator of the perceived probability of a risk occurring. Examples being Canopius, Chaucer or Liberty
Climate Change Academic	1	Respondent who operates as a full-time academic and researcher in the field of climate change. It should be noted that this respondent from time to time acts as a consultant to major utility companies.	This type of respondent is able to give a perspective on the need for carbon emissions abatement, but more importantly in the context of this research the application of regulatory imperatives

4.5 Research Hypothesis

As stated above, studies related to wind energy in Germany¹⁷⁸¹ and Denmark,¹⁷⁸² as well as biomass energy in Finland and Sweden¹⁷⁸³ all emphasised the need for regulatory stability to maintain investment levels.¹⁷⁸⁴

¹⁷⁸¹ Staffan Jacobsson and Volkmar Lauber, 'The politics and policy of energy system transformation: Explaining the German diffusion of renewable energy technology', (2006) 34 Energy Policy, 256

¹⁷⁸² Niels I Meyer, 'Influence of government policy on the promotion of wind power', (2006) 25 International Journal of Global Energy Issues, 204; see also Paolo Agnolucci, 'Wind electricity in Denmark: A survey of policies, their effectiveness and factors motivating their introduction', (2007) 11 Renewable and Sustainable Energy Reviews, 951

¹⁷⁸³ Karin Ericsson, Suvi Huttunen, Lars J Nilsson and Per Svenningsson, 'Bioenergy policy and market development in Finland and Sweden', (2004) 32 Energy Policy, 1707; See also Staffan Jacobsson, 'The emergence and troubled growth of a "bio-power" innovation system in Sweden', (2008) 36 Energy Policy, 1491

¹⁷⁸⁴ Joel Smith and Johannes Urpelainen, 'Removing fuel subsidies: How can international organizations support national policy reforms?' (2017) 17(3) International Environmental Agreements: Politics, Law and Economics, 327; Margaret Young, 'Energy Transitions and Trade Law: Lessons from the Reform of Fisheries Subsidies' (2017) International Environmental Agreements: Politics, Law and Economics (Forthcoming); University of Melbourne Legal Studies Research Paper No. 746. Available at <https://ssrn.com/abstract=2930693>; Ambrus Bárány and Dalia Grigonytė, 'Measuring Fossil Fuel Subsidies', European Commission, available at http://ec.europa.eu/economy_finance/publications/economic_briefs/2015/pdf/eb40_en.pdf, accessed 15

Therefore, a clear research hypothesis was that Developer Operator respondents would report a desire for regulatory stability, or at the very least forecastable change in the regulatory framework. The empirical research therefore sets out to understand the views of market operators as to the potential for the regulatory framework which provides the renewable support schemes across the EU to be removed because of the diagonal conflict between free movement, practices distortive of competition and other elements of state aid law

Additionally it was felt that all respondents would report the tracking of regulatory volatility as a project or other risk factor - being the probability that the 'rules of the game' existing at the time of the investment decision change during the operational life of the asset in a manner that is not forecastable.¹⁷⁸⁵ This means the views of market participants to concepts such as legitimate expectation¹⁷⁸⁶ in relation to regulatory stability were also sought, it being believed that all respondents would report regulatory volatility as a negative.

In undertaking the empirical research, it is also acknowledged that there are likely to be other causes of regulatory volatility, such as changes to the economic environment inducing changes to banking and corporate governance as well as legislative priorities,¹⁷⁸⁷ technological developments,¹⁷⁸⁸ and the changed composition of governments with reduced belief in climate change,¹⁷⁸⁹ being only a few. Therefore, in relation to changes in governmental composition and economic changes, questions on this subject were asked directly of respondents.

Lastly, it was believed that all respondents would seek to mitigate the effects of any regulatory volatility and the effects such events have on the down side of project returns or regulatory perception.

The questions asked, and therefore the initial direction of the interviews, were based on the desire to understand responses related to these issues.

October 2016; David Victor, 'The Politics of Fossil-Fuel Subsidies' (2009) Available at <https://ssrn.com/abstract=1520984> accessed 20 October 2016; See Also Euroelectric, *Ensuring investments in a Liberalised Electricity Sector*, (Euroelectric, 2004), 53; International Energy Agency, *Power Generation Investment in Electricity Markets* (International Energy Agency, 2003), 12

¹⁷⁸⁵ The World Bank Group-Multilateral Investment Guarantee Agency, *World Investment & Political Risk* (The World Bank Group, 2009) 28; See also Anatole Boute, 'Regulatory Stability Under Russian and EU Energy Law' (2015) 22 (4) *Maastricht Journal of European & Comparative Law*

¹⁷⁸⁶ Eleanor Sharpston, 'European Community Law and the Doctrine of Legitimate Expectations: How Legitimate, and for Whom', (1990) Volume 11(1) *Northwestern Journal of International Law & Business*; see also Takis Tridimas, *The General Principles of EU Law* (2nd edition, Oxford University Press, 2007), 242

¹⁷⁸⁷ David Erkens, Mingyi Hung and Pedro Matos, 'Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide' (2012) 18 *Journal of Corporate Finance*, 389

¹⁷⁸⁸ Felix Creutzig, Peter Agoston, Jan-Christoph Goldschmidt, Gunnar Luderer, Gregory Nemet and Robert Pietzcker, 'The underestimated potential of solar energy to mitigate climate change' (2017) 2 *Nature Energy*

¹⁷⁸⁹ *Public Employees for Environmental Responsibility v U.S. Environmental Protection Agency* – 5 June 2018 Civil Action No. 17-652 available at <https://cdn.arstechnica.net/wp-content/uploads/2018/06/epa.pdf> accessed 16 July 2018

4.6 Research Findings

In seeking to address directly the research questions as outlined, the respondents were asked about their experience of operating in a regulatory framework that was essentially in diagonal conflict with the pillars of EU free trade and the Treaty. Having gained empirical data from the interviews, the themes that emerged are discussed below. Following the thematic analysis four main themes were found to exist (i) what is regulatory risk and why is it important, (ii) the origins of regulatory risk, (iii) regulatory risk management and mitigation and (iv) the future of regulation. Each of these main themes was composed of sub-themes as are set out. The sub-themes are discussed in order of importance as reported by the respondents to the empirical research.

In certain cases, considering the empirical findings, it is important to define a lexicon surrounding the views of the regulatory framework. This lexicon is either set out in the abbreviations section at the beginning of this thesis or in foot notes where sector specific terminology is used.

Theme 1 – What is Regulatory Risk and Why is it Important

The respondents were asked about their perception of the diagonal conflicts outlined in Chapters 3 and 4. It became clear, however, that many of the respondents articulated their perception and concern related to the conflicts not as a legal risk but as a regulatory¹⁷⁹⁰ and economic risk, thus articulating their understanding of the conflicts using that lexicon. As a result, the following themes emerged from the responses.

Theme 1.1 – Regulatory Volatility and Why its Reduction is Important

In seeking to address directly the research question, the respondents were all asked specifically about the economic, social and regulatory effect of regulatory volatility¹⁷⁹¹ and why operating in a regulatory framework that is volatile, compared to stable and forecastable, is important for the future of renewable electricity. As such the respondents were asked to set out and discuss their perception of the diagonal conflict between the renewables regulatory framework and the Treaty

¹⁷⁹⁰ Regulatory Risk is defined in this thesis as changes in the regulatory framework that were not forecastable at the time of the asset investment decision and therefore will include Regulatory Volatility, as well as regulatory changes that only become forecastable after the asset investment decision is made. See Abbreviations section above

¹⁷⁹¹ Regulatory Volatility is defined in this thesis as regulatory change that is or has not been forecast by Developer Operators as investors in the industry and as necessary by legislators and regulators

based free trade principles. Respondents were also asked to reflect on the main regulatory changes, issues or risks they saw within their own business or the business of their clients (essentially forecastable risks) and then to outline their concerns for unforeseeable risk which could be considered volatility.

The respondents all stated that they foresaw regulatory risks – meaning a change of regulation that would negatively impact the revenue of renewable electricity facilities. Going on to state that appropriately engaging on the main regulatory risk to their business or the business of their clients was the focus of their regulatory analysis and mitigation processes. The main regulatory risks, outlined below, reported by the respondents are dependent on the business division and context in which the respondents operate as individuals. Also, it is clear that the Developer Operators see regulatory and commercial risks as being completely intertwined and hence did not, in the main, distinguish between diagonal or other types of conflicts in EU law. The Developer Operator respondents stating in one form or another than considering regulatory risk and seeking to manage this risk was about enabling the delivery of the business plan, going on to state that consistency, with no surprises was at the core of their interaction with regulators and legislators (all 7 Developer Operators).

As an example of how market operatives see regulatory and commercial risks as being one and the same, External Legal Counsel 3 and Developer Operator 5 both listed Brexit¹⁷⁹² and the lack of regulatory history, as the single event creating the highest level of regulatory volatility in nearly 30 years. As an origin of regulatory volatility, with both respondents stating that whilst the starting regulatory framework at the point of Brexit might be the same for the EU and the UK, the future is unknown for the UK.

The responses are informed by the need to consider not only current business risks but also risks, but also future developments in the regulatory framework 'so far as that is foreseeable at the time of that analysis' (*Green Network*),¹⁷⁹³ with several respondents stating that should a claim be made the CJEU may consider not only the current framework, but potential developments in any compensation claim (Developer Operators, External and Internal Legal Counsel). The nature of 'foreseeable' therefore being critical and giving an edge to the analysis of regulatory issues. If 'foreseeable' was held in future judicial processes to only be those changes that could be foreseen from EU consultation

¹⁷⁹² A term in common usage to describe the process by which the UK will leave the EU, having issued a notice in accordance with Article 50 TEC

¹⁷⁹³ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399, para 61; See also CJEU Case Opinion 1/13 ECLI:EU:C:2014:2303, para 74; Opinion 1/03, ECLI:EU:C:2006:81, para 126, 128 and 133; Case C-114/12 *Commission v Council*, ECLI:EU:C:2014:2151, para 74

documents or other formal communications this is a manageable, however, if it is expanded for include 'what the respondent should have known' then this gives considerably more importance to future regulatory scenarios and their interpretation.

The Internal Legal Counsel 1 highlighted a series of current issues, all of which were very much focussed on the operation of the asset portfolio owned by the company for which the respondent works. The answer also indicates that the operation of assets is a key focus of the company and that it potentially has a dominant market position thus any failures in its submissions would be easily seen by a number of market players. The respondent listed REMIT¹⁷⁹⁴ and MIFID¹⁷⁹⁵ as the main risk, as it related to potential fines for failures to declare maintenance outages and operational restrictions.¹⁷⁹⁶ The REMIT and MIFID regulations require generating companies to declare their operational assets and their future maintenance outage plans to third parties so that the trading functions of these companies have no greater information in this regard than other traders in the market. This risk relates to the complexity of the regulatory framework and the fact that by its very polycentric nature something can be missed. Internal Legal Counsel 2 further explaining that asset managers charged with the safety and availability of the assets within a generating company's portfolio are also asked to provide information for a regulatory compliance obligation.

External Legal Counsel 2 continued by stating that it is a priority for the electricity generation industry to gain greater acceptance by the public, as this will enhance the industry's ability to gain construction and operating permits for renewable energy and also in relation to the price of renewable electricity, although with the reduction in capital costs this might be a short-lived concern.¹⁷⁹⁷

¹⁷⁹⁴ REMIT is the EU Regulation 'On energy market integrity and transparency (No 1227/2011). It provides a consistent EU-wide regulatory framework specific to wholesale energy markets that: (i) defines market abuse, including market manipulation, attempted market manipulation or insider trading, (ii) explicitly prohibits market abuse (iii) requires effective and timely public disclosure of inside information by market participants (for all practical purposes this relates to generating plant outage information), and (iv) obliges firms professionally arranging transactions to report suspicious transactions - Regulation (1348/2014/EC) on data reporting implementing Article 8(2) and Article 8(6) of Regulation (EU) No 1227/2011 OJ L336

¹⁷⁹⁵ MIFID is the Markets in Financial Instruments Directive (2014/65/EC). It has been applicable across the European Union since November 2007, with a revised Directive in 2014, which became fully effective on 1 January 2018. It is a cornerstone of the EU's regulation of financial markets seeking to improve their competitiveness. This includes trading on energy trading hubs / exchanges – EU Directive (2014/65/EU) on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU Text with EEA relevance OJ L 173

¹⁷⁹⁶ For example the Dispute Settlement and Sanctions Committee (CoRDs) of French Energy Regulator fined VITOL S.A. €5 million for engaging in 'market manipulation' between 1 June 2013 and 31 March 2014 via the REMIT Regulations, (9 October 2018) – available at <https://www.cre.fr/en/News/The-Dispute-Settlement-and-Sanctions-Committee-CoRDs-imposes-a-penalty-for-market-manipulations-on-the-wholesale-energy-market> accessed 15 October 2018

¹⁷⁹⁷ UK's Hornsea 3 Project bidding an auction price of 57.5 £/MWh during the 2017 CfD auction – a price comparable with thermal generation and the wholesale market – known as grid party pricing – See Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

External Legal Counsel 2 went on to state that there is a risk that generation assets would be nationalised in one or more-member states with little or no compensation for investors, hence making those countries ‘uninvestable’ especially as it is known that the ‘legitimate expectation’ provisions within the Energy Charter Treaty are unlikely to be prioritised over the ‘right to regulate’ (see Section 3.5.8).

The above responses show the concern market participants have for the actions of national governments and national regulators, as it is these bodies that provide the day to day governance function.

The External Legal Counsel (1, 2 and 3) respondents highlight the loss of revenue certainty in a business environment with no feed-in tariffs. They saw business environment as having almost no forecastability and thus high levels of regulatory volatility. Going on to highlight this risk, as a funding issue, increasing the cost of capital, showing the vulnerability of their clients to debt finance.

External Legal Counsel 1 simply outlined a series of risks as being a concern, ranging from the cancelling of sovereign guarantees to state aid issues related to feed-in tariffs. The concern being highlighted by the issues outlined in *PreussenElektra*¹⁷⁹⁸ *Vent De Colère*¹⁷⁹⁹ *Austrian Green Levy*¹⁸⁰⁰ and *German Green Levy*¹⁸⁰¹ where design of the renewables support scheme was found to be critical to a finding of compatible state aid.

External Legal Counsel 2 also added the change in renewables support from the renewable obligation certificate¹⁸⁰² to the contract for difference¹⁸⁰³ regime as a risk to be managed. The concern was stated as not simply a process point but one focused on the viability of small renewable electricity projects and their ability to achieve output price parity in any contract for difference auction with larger projects on a simple economies of scale basis. As can be seen from the recent auction

¹⁷⁹⁸ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of *Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

¹⁷⁹⁹ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹⁸⁰⁰ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁸⁰¹ Commission Decision 2015/1585, Aid Scheme SA 33995 –“ implemented by Germany for the support of renewable electricity and of energy-intensive users”, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁸⁰² Renewables Obligation Certificates (ROCs) ROCs are certificates issued to operators of accredited renewable generating stations for the eligible renewable electricity they generate. Operators can trade ROCs with other parties. ROCs are ultimately used by suppliers to demonstrate that they have met their obligation - <https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro> accessed 16 July 2018

¹⁸⁰³ A Contract for Difference (CFD) is a private law contract between a low carbon electricity generator and the Low Carbon Contracts Company (LCCC), a government-owned company. A generator party to a CFD is paid the difference between the ‘strike price’ – a price for electricity reflecting the cost of investing in a particular low carbon technology – and the ‘reference price’ – a measure of the average market price for electricity in the GB market. It gives greater certainty and stability of revenues to electricity generators by reducing their exposure to volatile wholesale prices, whilst protecting consumers from paying for higher support costs when electricity prices are high - <https://www.gov.uk/government/collections/electricity-market-reform-contracts-for-difference> accessed 16 July 2018

process for offshore renewable sites in the UK (known as a 'concession auction') where the UK's Hornsea 3 Project bid an output price broadly equal to the output price of coal and gas generation and as such the wholesale electricity market – a price point known as 'grid parity'.¹⁸⁰⁴ The economic element of the transition to a contract for difference auction process is that the Hornsea project is able to achieve economies of scale as it has a capacity of 2,400MW.¹⁸⁰⁵

Lastly, External Legal Counsel 3 lists the lack of a detailed understanding as to the continuation of regulations and market mechanisms such as the EU-ETS as being an investment risk. The lack of clarity meaning that cost of capital for a project will increase and thus projects which might have become operational in a clearer regulatory environment will now not.

All the Developer Operator respondents stated, in one form or another, that price uncertainty with future contract for difference and concession auction processes was a preeminent risk.¹⁸⁰⁶ The Developer Operator respondents putting forward their view that over the life cycle of electricity generation assets, it is not possible to robustly forecast the forward curve for electricity wholesale prices. Therefore, the Developer Operator respondents state that any uncertainty over the revenues available to renewable generation in the concession auctions or regulatory volatility causing negative movements in those revenues, is their number one risk. The Developer Operator respondents indicated that they see the churn in the design in renewable support schemes as a source of regulatory risk, in that it is clear that a poorly designed support scheme can be declared to be state aid thereby placing the support scheme in diagonal conflict with Article 107 TFEU, with a potential to have monies paid reclaimed.¹⁸⁰⁷ Internal Legal Counsel 1 directly illustrated this point using the example of the German renewable support scheme which was revised following the *German Green Levy*¹⁸⁰⁸ case and the Commission's decision that the revised scheme was allowable.¹⁸⁰⁹

In highlighting the regulatory instability issue and its effect on investment in the renewables sector, several of the respondents (Internal Legal Counsel,

¹⁸⁰⁴ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions and What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

¹⁸⁰⁵ <http://hornseaproject3.co.uk/en/About-the-Project#0> accessed 1 September 2018

¹⁸⁰⁶ From 2016 renewable electricity projects are required to enter an auction process such that the lowest cost projects would receive price support at the price the project has bid into the auction. The resulting renewables support scheme instrument is a contract for difference in accordance with Renewable Energy Directive Article 3(2); See European Commission guidance for the design of renewables support schemes, SWD(2013) 439 final; COM(2015)80 final; <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2015:80:FIN>

¹⁸⁰⁷ Case T-131/16 *Belgium & Magnetrol International v Commission* ECLI:EU:T:2019:91

¹⁸⁰⁸ Commission Decision 2015/1585, Aid Scheme SA 33995 –“ implemented by Germany for the support of renewable electricity and of energy-intensive users”, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁸⁰⁹ Commission Decision SA.45461 EEG 2017 - Reform of the Renewable Energy Law - http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_45461

Developer Operator 1, 4, 5, 6 and 7, the Investment Fund Manager and Insurance respondent) brought up the retrospective feed-in tariff reductions in *Charanne*¹⁸¹⁰ (Spain) and *Scat Punti Vendita*¹⁸¹¹ (Italy) (Section 3.5.8).

Internal Legal Counsel 1 illustrated this point by saying that a developer can always choose not to invest in a particular asset if the economics do not work, but existing assets have been approved based on a set of regulations and as such becoming aware that there is effectively no redress for retrospective changes is a major risk.

Developer Operator 5 made an insightful response by stating that in a regulatory environment post the retrospective reductions in renewables support the only incentive on EU member states to maintain any semblance of regulatory stability is the need for future investment in generating assets by renewables developers and as such without this pressure the regulatory environment would be highly volatile.

The Investment Fund Manager also made the statement that retrospective changes can not only make a sector uninvestable, but can make a country uninvestable.

The Insurance Manager stated that following the [Italy and Spain style]¹⁸¹² changes in tariff, most [insurance]¹⁸¹³ policy documents would now exclude Government imposed tariff change. The Insurance Manager then went on to give a further example of the UK OFTO¹⁸¹⁴ income adjusting events, where it was stated that insurance providers would look for clients to put mitigation in place for such events. The Insurance Manager went on to say that in a 2012 KPMG report¹⁸¹⁵ it states that regulatory change insurance is available for a direct change in a Licence Condition¹⁸¹⁶ where the renewable support framework is specifically stated within the licence, although market practice shows such policies not to be readily available.

¹⁸¹⁰ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf accessed 20 January 2017

¹⁸¹¹ Decision 10/2015, *Scat Punti Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

¹⁸¹² Specific project reference redacted to preserve anonymity

¹⁸¹³ Specific project reference redacted to preserve anonymity

¹⁸¹⁴ OFTO – is an offshore transmission operator - OFTO assets link offshore generation to the onshore network. OFTO assets will normally have ownership of offshore electricity transmission infrastructure (such as offshore substation platforms, subsea export cabling and onshore cabling), an onshore substation, and the electrical equipment relating to the operation thereof - <https://www.ofgem.gov.uk/ofgem-publications/85943/offshoretransmission-aninvestorperspective-updatereport.pdf> accessed 25 June 2018

¹⁸¹⁵ Andy Cox, David Gascoigne, Matt Firla-Cuchra, Yoon Chong, Adrian Scholtz and Hylton Millar, 'Offshore Transmission: An Investor Perspective' [2012] KPMG available at <https://www.ofgem.gov.uk/ofgem-publications/79347/ofto-aninvestorperspective.pdf> accessed 25 June 2018

¹⁸¹⁶ Generating facilities (renewables or otherwise) are usually granted a Licence to operate by their national regulatory body. The licences will contain a number of duties and obligations – For examples of current UK licence conditions see <https://www.ofgem.gov.uk/licences-industry-codes-and-standards/licences/licence-conditions> accessed 23 September 2018

Whilst it is not surprising that any entity investing in assets to provide goods or services to a market would seek to understand the process by which the regulatory framework of the market may change and in so doing reduce the returns from those assets, it is the diversity of issues reported which shows the variety of concerns with which market operators contend.

The balance of responses made show that respondents are highly focused on the design of the regulatory framework and how this might change overtime. The broad sweep of comments related to the design of the support schemes in place in the member states and how a poorly designed scheme could be declared state aid and thus leave the operators considerably out of pocket as monies are recovered and not repaid once a revised scheme is put in place.¹⁸¹⁷

Theme 1.2 Diagonal Conflict between the Renewable Energy Regulatory Framework and Free Movement of Goods

The respondents overall saw the free movement of goods restriction, relating to renewable electricity, in a spectrum from (i) a problem that was a factor relating to ongoing legal 'issues' on which External Legal Counsel 1 and 2 were advising and as such they could not offer a response due to professional ethics restrictions, (ii) an issue of regulatory volatility (Internal Legal Counsel 1) and finally (iii) a factor within the national renewables legislative framework that had to be complied with and managed accordingly (Developer Operators 4 and 5). Three of the Developer Operator respondents had not come across the issue in a business context and as such were not able to offer a response on the issue.

External Legal Counsel 1 and 2 are senior partners at international law firms (either being or being akin to magic circle firms)¹⁸¹⁸ and the fact that they reported an inability to answer questions on the topic of the regulatory conflict with free movement due to ongoing litigation or advice being given in contemplation of litigation, shows the importance of this issue and that it is an issue currently in contemplation of litigation.

Internal Legal Counsel 1 stated the conflict between the renewable energy regulatory framework, be it at member state or at EU level,¹⁸¹⁹ and EU primary law was a 'significant business risk'. Internal Legal Counsel 1 in response to the question went straight to the nationally focussed renewable electricity support schemes which are set up in accordance with the Renewable Energy Directive (Article 3(3)) which

¹⁸¹⁷ Case T-131/16 *Belgium & Magnetrol International v Commission* ECLI:EU:T:2019:91

¹⁸¹⁸ <https://www.lawgazette.co.uk/news/its-a-kind-of-magic/42082.fullarticle>

¹⁸¹⁹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

restricts the free movement of renewable electricity. The respondent stated that such a position is inconsistent with EU primary law (Treaty provisions). As a result of the export restriction surrounding renewable electricity Internal Legal Counsel 1 also stated that another aspect of the business risk was that

‘it may not be possible to import/export renewable electricity when nuclear closes, thus requiring generators to seek asset life extensions to ensure continuity of supply’

Internal Legal Counsel 1 stating that the export restriction surrounding renewable electricity is not simply an academic issue, or one related to the access to renewable support schemes outside the renewable electricity facility’s host country, but an operational issue in conflict with other parts of a member state’s energy policy, in this case the closure of nuclear.¹⁸²⁰ It being noted by additional respondents (Developer Operator 4, 5 and 7) that in other member states the closure of coal generation, in accordance with the requirements of the Industrial Emissions Directive,¹⁸²¹ will create the same issue such that a power gap may ensue as this will not be filled with renewable electricity but potentially carbon emitting forms of generation, effectively importing from other member states the same form of electricity that had just been decommissioned in the host country.

External Legal Counsel 3 was able to discuss conflict issues related to the free movement of renewable electricity and stated that the case law reconciling free movement and the details of the member states’ renewable regulatory frameworks is *‘not satisfactory in the long-term’*. The respondent suggesting that the current situation where member states can restrict the export of renewable electricity which has received revenue support either (or both) by a feed-in tariff or a tradeable renewable certificate, should not be viewed as creating regulatory stability. The respondent suggested that the case law supporting this framework ((e.g. *PreussenElektra*,¹⁸²² *Essent 1*,¹⁸²³ and *Ålands Vindkraft*¹⁸²⁴ as set out above) could be removed.

¹⁸²⁰ *Vattenfall AB and others v Federal Republic of Germany*, ICSID Case No. ARB/12/12; See Also Anatole Boute, ‘Energy Trade & Investment Law: International Limits to EU Energy Law & Policy’ in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

¹⁸²¹ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

¹⁸²² Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein ECLI:EU:C:2001:160

¹⁸²³ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁸²⁴ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

External Legal Counsel 3 argued this line of case law and its failure to enforce free movement serves to further reinforce the competence¹⁸²⁵ of member states to determine their renewables support schemes within the Renewable Energy Directive. The clear vertical line within the regulatory framework that is headed by Article 194(1) TFEU, which requires the EU, in solidarity with the member states, to support the development of renewable energy, implemented by the Renewable Energy Directive and ultimately the member states was in diagonal conflict with Articles 28 to 35 TFEU (free movement). With this as a background External Legal Counsel 3 went on to state that '*national renewable support schemes are out of step with wider EU law and thus need to be modified*' so that renewable generation facilities can be built where the climatic conditions best suit renewables without free movement restrictions, thus allowing the development of the lowest cost projects.

The point made by External Legal Counsel 3, that the free movement restriction within national renewable support schemes is hindering the development of renewable facilities in areas that would allow low cost projects to be developed, was also made by Developer Operator 4 and 5.

Developer Operator 4 and 5 saw the free movement restrictions within the national support schemes for renewable electricity as a 'cost to serve'¹⁸²⁶ issue, where the capital and on-going revenue costs of operations and maintenance were not minimised and output maximised. Developer Operator 4 going on to state that as an organisation they had within one of their future regulatory scenarios the potential for the regulator¹⁸²⁷ to seek to claw back part of the revenue support where it was found that output costs from renewable electricity facilities were not in accordance with the best practice levelised cost of energy.¹⁸²⁸ Developer Operator 4 saw the restriction of movement as an event of regulatory volatility, as additional costs are created in the generation of renewable electricity resulting from facilities

¹⁸²⁵ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁸²⁶ Cost to serve in this context is the summation of the costs to produce electricity from the renewable generation facility, based on actual business costs such as capital, maintenance, repair, operational overhead and other costs incurred in operating the facility

¹⁸²⁷ Details of the exact national regulator redacted to maintain anonymity

¹⁸²⁸ Levelised Cost of Energy (LCOE), measures lifetime asset costs (Capex and Opex) divided by energy production - International Renewable Energy Agency 'Renewable Power Generation Costs in 2017' https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_2017_Power_Costs_2018.pdf accessed 16 July 2018

not being located where wind or solar resources are optimal, which could be disallowed by regulators (either national or potentially ACER)¹⁸²⁹ in the future.

In response to questions related to the restriction of free movement for renewable electricity, Developer Operator 5 stated that the conflict is not only with free movement of goods, but is distortive of competition and other elements of prohibitions of state aid [Article 107 TFEU] due to the enhanced revenue paid to renewable electricity facilities. With Developer Operator 5 going on to state that *'climate change is predominant, so other issues seem to be ignored'*.

Developer Operator 6 stated that not developing renewable facilities where wind and solar resources were maximised meant that electricity market costs are not always optimal, as the costs of production is a combination of the capital and operational costs on one hand and the level of output on the other.

Developer Operator 7 also echoed this point stating that renewables facilities should be given every support in being developed in locations with the highest wind and solar resources.

Developer Operator 7 made an important point about the development of renewable facilities by stating

the real issue is not about the export of renewable electricity in the operational phase, but the ability to seek renewable support from a country outside the host country

The Investment Fund Manager, in response to questions on the restriction of free movement for renewable electricity, simply stated this to be an issue that should be monitored going forward.

The statement from two of the three External Legal Counsel respondents that they could not answer questions related to the renewable electricity support schemes and free movement due to ongoing advice in contemplation of litigation is a clear indication of the importance of this issue.

Furthermore, having Internal Legal Counsel indicating their awareness of the free movement issue in the context of a power system dispatch and operational shortage scenario shows that utilities with the EU are discussing this issue widely and are seeking legal advice on the matter – having lawyers aware of, and being able to discuss effectively a power system dispatch issue shows this is an important business concern.

¹⁸²⁹ ACER - Agency for the Cooperation of Energy Regulators - <https://www.acer.europa.eu/en/Pages/default.aspx> accessed 16 July 2018

The responses from the Developer Operators show the fear of utility companies relates to their ability to effectively develop facilities in the most effective locations. Also, that renewables support schemes may be curtailed in future on the grounds of not providing best value.

The Developer Operator and Investment Fund Manager responses are believed to reflect the fact that renewable generating companies (and also generating companies which own a portfolio of generation types – coal, gas and nuclear) are very focussed on the needs of the electricity market in front of them.

Theme 1.3 Removal of Priority

Renewable electricity currently enjoys priority dispatch¹⁸³⁰ within the EU, such that when a renewable electricity facility can generate it is allowed to do so and if required other forms of generation will be shut down – known in the industry as ‘curtailed’.¹⁸³¹

Internal Legal Counsel 2 stated that potential changes to the practice of priority dispatch¹⁸³² as proposed by ACER¹⁸³³ and others in relation to renewable electricity, would mean that competitors would change the way they operate and as such this was unforecastable due to the lack of history in running a merit order dispatch process¹⁸³⁴ including renewable generation. These proposals leading to not only regulatory uncertainty but also unforecastable changes in the operational

¹⁸³⁰ ‘Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.’ - P Palermo ‘Approaches to Generation Dispatch in Transmission Planning’ (2009) 135 CIGRE; therefore ‘Priority Dispatch’ is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

¹⁸³¹ Curtailment is a forced reduction in the output of an electricity generation facility from what it could otherwise produce given available resources, typically as a result of capacity constraints in the transmission system - Lori Bird, Jaquelin Cochran, and Xi Wang, ‘Wind and Solar Energy Curtailment: Experience and Practices in the United States’ [2014] National Renewable Energy Laboratory Working Paper; See Also Henrik Klinge Jacobsen and Sascha Thorsten Schröder, ‘Curtailment of renewable generation: Economic optimality and incentives’ (2012) 49 Energy Policy, 663

¹⁸³² ‘Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.’ - P Palermo ‘Approaches to Generation Dispatch in Transmission Planning’ (2009) 135 CIGRE; therefore ‘Priority Dispatch’ is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

¹⁸³³ <https://acer.europa.eu/Media/News/Pages/Regulators-call-for-priority-dispatch-of-existing-Renewables-to-be-removed.aspx>; See also European Energy Regulators’ Overview Paper Initial Reactions to the European Commission’s proposals on Clean Energy available from https://acer.europa.eu/Media/News/Pages/European-Energy-Regulators_Overview-Paper-Initial-Reactions-to-the-European-Commission_s-proposals-on-Clean-Energy.aspx

¹⁸³⁴ Merit Order Dispatch of generating facilities means ‘the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.’ - P Palermo ‘Approaches to Generation Dispatch in Transmission Planning’ (2009) 135 CIGRE

practice of authorities responsible for generation dispatch and the market practice of generating companies with several different plant types within their portfolios.

In continuing this theme, External Legal Counsel 3 stated that the loss of priority dispatch for renewables would have implications for within country and cross-border trades, as renewable generation will have to account for curtailment (also known as transmission constraints) within the network in its dispatch decisions and the way renewable facilities place output bids¹⁸³⁵ into the trading system. External Legal Counsel 3 also makes an important point about the practical implications of the loss of priority dispatch for renewables, in that for the first time renewable generation facilities will become 'balancing responsible parties'¹⁸³⁶ (BRP) and will have to contract with other generators to make good any short fall in dispatch or pay the market cash out price.¹⁸³⁷ This places renewables at a distinct disadvantage compared to other generation types, as renewable output is dependent on wind and solar resources and is therefore intermittent.

Many of the respondents discussed the regulation of priority network access¹⁸³⁸ and priority dispatch¹⁸³⁹ for renewable electricity. The Developer Operators (Developer Operator 1, 4, 6 and 7) were supportive of the continuation of priority network access and priority dispatch for renewable electricity facilities and were broadly satisfied with the current regulatory regime. Developer Operator 4 also raised the point that should renewable generation facilities have their output curtailed due to the loss of priority dispatch, this could only mean that carbon emitting generation is being dispatched to make up the shortfall in generation output to the

¹⁸³⁵ In order to be dispatched conventional generation will bid a level of output and price into the applicable market mechanism. The transmission system operator will then dispatch generating plant against a merit order – with cheapest plant dispatched first and then plant in increasing price increments until demand is met. The transmission system operator will also take account of any constraints in transmission capacity in making a dispatch instruction. A transmission constraint is caused by the transmission system not having enough capacity to allow free flow of electricity and as such electricity is routed differently than the route it would seek to take naturally. See Juan Morales and Salvador Pineda, 'On the inefficiency of the merit order in forward electricity markets with uncertain supply' (2017) 261(2) *European Journal of Operational Research*, 789; Pieter Schavemaker and Lou van der Sluis *Electrical Power System Essentials* (Wiley, 2016) 261

¹⁸³⁶ A technical term given to generators who are part of the merit order dispatch process such that they balance the actual output at any time during the market dispatch period and what the generator stated it would dispatch at the time it bid its output and price.; See Balancing & Settlement Code https://www.elexon.co.uk/wp-content/uploads/2018/04/GB_BSC.pdf accessed 17 July 2018

¹⁸³⁷ A technical term given to the price and ultimately the payment that is made by generators who have a mismatch between the electricity actually dispatched and the volume of electricity the generator stated it would dispatch at the time it bid its output and price.; See Balancing & Settlement Code https://www.elexon.co.uk/wp-content/uploads/2018/04/GB_BSC.pdf accessed 17 July 2018

¹⁸³⁸ Priority network access is the obligation placed on member states to establish transparent and proportionate administrative procedures for the conclusion of network connection for renewable electricity facilities in accordance with Article 13 and 16 of the Renewable Energy Directive

¹⁸³⁹ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 *CIGRE*; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

network and therefore this would seem to conflict as a policy with the EU's overriding objective¹⁸⁴⁰ of reducing carbon emissions from electricity generation.

However, Developer Operator 3 and 5 were concerned at the negative effect on market prices that priority dispatch for renewables has during periods of reduced electricity demand, going on to state that priority dispatch for renewables can undermine the market price for electricity and as such otherwise economic generating facilities are forced to close, such closure therefore having a destructive effect on energy security.¹⁸⁴¹ As an example of the concern a study found that the incorporation of renewables into electricity market processes as 'negative' demand had resulted in solar renewable electricity facilities reducing the price of electricity on the German electricity exchange by 10% on average, and by as much as 40% in the early afternoon in summer.¹⁸⁴²

Therefore, the situation is seen differently by different market operators. This difference is almost certainly to do with the proportion of renewables and other plant types in the generation portfolio of the particular undertaking.

The Investment Fund Manager was also concerned about the loss of priority dispatch and draws a direct link between its loss, increased risk and increased rates of return required on investments in renewable electricity facilities. The Investment Fund Manager stated that the removal of priority dispatch and embedded benefits from renewables makes such generation more closely aligned to the merchant risk of conventional power plants and therefore for some investment funds this will make the asset class uninvestable. In so doing the asset class will move away from the classic 5% to 7% return sought by pension funds, to funds that require higher rates of return. In other words, if renewables are required to comply with the day to day dispatch rules, then they are going to move into the double digit return general investment fund sector. As the dispatch price of renewable generation is dominated by capital and financing costs effectively doubling the cost of capital will further delay the ability of renewable generation to reach 'grid parity' pricing.

¹⁸⁴⁰ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁸⁴¹ Solar renewables being seen to reduce prices on the German energy exchange by 10% on average, and by as much as 40% in the early afternoon in summer – See Frank Sensfuß, Mario Ragwitz and Massimo Genoese, 'The Merit-order effect: A detailed analysis of the price effect of renewable electricity generation on spot market prices in Germany' [2007] Working Paper Sustainability and Innovation No. S 7/2007, Fraunhofer Institute for Systems and Innovation Research

¹⁸⁴² Frank Sensfuß, Mario Ragwitz and Massimo Genoese, 'The Merit-order effect: A detailed analysis of the price effect of renewable electricity generation on spot market prices in Germany' [2007] Working Paper Sustainability and Innovation No. S 7/2007, Fraunhofer Institute for Systems and Innovation Research

The Regulator respondent (a national regulatory) was supportive of the ACER view that the removal of priority dispatch should be examined to bring renewable generation in line with wider market practice. In relation to the costs imposed on consumers due to the curtailment¹⁸⁴³ of generation assets, which are part of the normal generation dispatch processes,¹⁸⁴⁴ the Regulatory respondent did acknowledge that the 'connect and manage'¹⁸⁴⁵ regime, creates curtailment costs for wind generation, as when electricity network capacity is such that renewable generation cannot be dispatched, the renewable generating facilities will not receive compensation at the level of the price contained in their support mechanism, but simply at wholesale market price levels, which may make certain sites uneconomic. However, the Regulatory respondent did go on to state that as a regulator, reducing curtailment costs, either through encouraging network innovation or new prioritisation mechanisms, was an important issue, without really being able to offer any specific ideas or potential policies in this area.

Theme 1.4 Removal of Embedded Benefits

Embedded benefits (See Section 3.5,13) exist as the electricity produced by generators connected to the distribution system offset costs incurred by the distribution and transmission network operators, as flows are reduced across distribution and transmission networks.¹⁸⁴⁶ These offset costs are either paid to the renewable generator as a subsidy or renewable generators are simply exempted from paying the costs of moving electricity across the distribution network. This issue was considered in the *Essent 2*¹⁸⁴⁷ case where it was held that any use of distribution network offset costs was a subsidy and simply being exempted from distribution costs is state aid.

¹⁸⁴³ Curtailment is a forced reduction in the output of an electricity generation facility from what it could otherwise produce given available resources, typically as a result of capacity constraints in the transmission system - Lori Bird, Jaquelin Cochran, and Xi Wang, 'Wind and Solar Energy Curtailment: Experience and Practices in the United States' [2014] National Renewable Energy Laboratory Working Paper; See Also Henrik Klinge Jacobsen and Sascha Thorsten Schröder, 'Curtailment of renewable generation: Economic optimality and incentives' (2012) 49 Energy Policy, 663

¹⁸⁴⁴ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE

¹⁸⁴⁵ Underlying principle is that generators would acquire firm access rights from a particular date and be allowed to generate or receive compensation from that date, subject to; local network upgrading being complete and the renewable facility being commissioned and available -

https://www.ofgem.gov.uk/sites/default/files/docs/2007/11/connect-and-manage_phil_0.pdf accessed 23 September 2018

¹⁸⁴⁶ Andy Pace, Jo Lord, Tom Edwards and Jonathan Davison, 'A Review of the Embedded Benefits accruing to Distribution Connected Generation in GB' [2016] Cornwall Energy for De-centralised Energy Association

¹⁸⁴⁷ Case C-492/14 *Essent Belgium NV v Vlaams Gewest* ECLI:EU:C:2016:732 - where it was determined by the CJEU that renewable generation should not be exempted from the obligation to pay distribution and transmission cost

As would be expected Developer Operators were concerned at their loss of embedded benefits. Four of the Developer Operator respondents showed significant concern with regards to the issue (Developer Operator 1, 5, 6 and 7), seeing it as a loss of revenue. The Developer Operator respondents felt that the network costs for transmission and distribution which they offset and thus share as a revenue source were more predictable than the market price for generation and, although a secondary income source, was reliable, predictable and thus important.

The Regulator respondent's comments focused on the need to put an end to the practice of granting renewable facilities embedded benefits, relating the issue to an equitable placement of the costs of development and maintenance of the distribution network on all market participants, including renewable generation. This would end free riding practices enjoyed by renewable generating facilities in relation to distribution network costs.

The Regulator respondent noting that the issue had been the subject of two cases *Essent 2*¹⁸⁴⁸ and a *UK Judicial Review*¹⁸⁴⁹ and that the court had determined that renewable generation should pay the costs of transporting electricity across the distribution and transmission network. However, irrespective of the loss of embedded benefits, it is the total cost of transporting electricity that is important for the industry and as such initiatives such as the joint venture between four¹⁸⁵⁰ UK electricity network companies to accommodate the increase in renewable power flowing onto local networks is welcomed, as it reduces the total cost of electricity distribution.¹⁸⁵¹

The removal of embedded benefits is a clear example of unforecastable regulatory change. The loss of embedded benefits is estimated to result in a 6% reduction in revenues which for many projects will require cost cutting to maintain project margins.¹⁸⁵²

¹⁸⁴⁸ Case C-492/14 *Essent Belgium NV v Vlaams Gewest* ECLI:EU:C:2016:732 - where it was determined by the CJEU that renewable generation should not be exempted from the obligation to pay distribution and transmission cost

¹⁸⁴⁹ *Peak Gen Top Co Ltd & Ors, R (on the application of) v The Gas And Electricity Markets Authority & Anor*, Court of Appeal - Administrative Court, June 22, 2018, [2018] EWHC 1583 (Admin) - relating the process the regulator had followed, where the UK administrative court found in Ofgem's [UK Energy Markets Regulator] favour

¹⁸⁵⁰ UK Power Networks, Scottish and Southern Electricity Networks, Western Power Distribution and National Grid

¹⁸⁵¹ UK Power Network Announcement - <https://www.ukpowernetworks.co.uk/internet/en/news-and-press/press-releases/Electricity-networks-unite-to-boost-renewable-energy-and-save-customers-40million.html#art-top> accessed 5 September 2018

¹⁸⁵² Merlin Hyman, 'The Future Revenue Stack Driving Value in an Uncertain Future' [2019] Smartest Energy available at <https://www.smartestenergy.com/info-hub/reports-and-guides/the-future-revenue-stack/>

Theme 1.5 Discontinuity between Generation Waste (Ash) and Carbon Emissions – Polluter Pays Uncertainties

As stated above, Article 191(2) TFEU states that as a priority environmental damage should be rectified at source on the basis that the polluter should pay for the remediation of any pollution or emissions. The drafting of Article 191(2) is an absolute obligation on polluters, whereas the Industrial Emissions Directive¹⁸⁵³ (a C&C style directive within the environmental competence¹⁸⁵⁴ of the Commission) and the Emissions Trading Directive¹⁸⁵⁵ (a market style directive within the environmental competence of the Commission) allow carbon (plus other gasses) emissions, thus the Directives conflict with the Treaty. As the environmental and energy articles of the TFEU (191 and 194 TFEU respectively) are so interrelated, this conflict should really be regarded as vertical.

Also, the explicit ability for coal and gas generation plant to emit (within limits) carbon-based gases¹⁸⁵⁶ contained in the Industrial Emissions Directive and the Emissions Trading Directive, creates a direct discrimination against coal fuelled generating plant. On a unit of output basis, coal is more carbon intensive and less energy intensive than gas, therefore coal generation is required to have available a larger number of emissions credits. Additionally, the burning of coal produces ash, whereas gas has almost no solid residual waste. The Industrial Emissions Directive makes no allowance for the emission of ash and also sets limits on dust emissions (mostly coal soot)¹⁸⁵⁷ as part of the combustion process.

The respondents (Internal Legal Counsel 1, Developer Operators 5 & 6) made the comment that emission allowances were issued for free in association with the EU-ETS, whereas there was no free mechanism for ash. This creating a discontinuity between gas and coal generation, with carbon emissions being tradable at a price below the costs of rectification at source, whereas there is an

¹⁸⁵³ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

¹⁸⁵⁴ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁸⁵⁵ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁸⁵⁶ Any carbon based fuel (coal, methane – commonly known as gas, or oil) combusted in an oxygen atmosphere will result in carbon dioxide and other carbon based gases being produced post combustion

¹⁸⁵⁷ Soot is a substance consisting largely of amorphous carbon, produced by the incomplete burning of organic matter - coal

absolute obligation to manage ash type wastes at the full costs of waste management.

The respondents commented that these conflicts and discriminations created a risk of regulatory change - forecastable or not.

Internal Legal Counsel 1 also reported that the Industrial Emissions Directive is not easy to comprehend, let alone its incorporation into the national law of EU member states. The incorporation into national laws was reported as creating a further layer of complexity and potential for inconsistency.

Three of the respondents (Internal Legal Counsel 1 and Developer Operators 5 and 6) reported that the Industrial Emissions Directive sets a timetable for the closure of coal plant and that any inconsistency in its incorporation into or enforcement within national law that changes this timetable will have a detrimental effect on the closure programme of generation companies with a portfolio of plant types (coal, gas, nuclear). The respondents also stated that there was no point in closing plant domestically to only import electricity from other member states where the Industrial Emissions Directive is not being enforced so robustly.

Developer Operators 5 and 6 also made note of the potential for the Industrial Emissions Directive to be modified should the COP 21 Paris Climate Agreement be modified or certain significant players (USA and or China) not ratifying the agreement. Developer Operators 5 and 6 stated this to have the ability to place the investment made in generating plant emission abatement, at risk of being unremunerated or rendered obsolete should the Industrial Emission Directive be subject to regulatory volatility and the resulting modified Directive, force plant closure.

The discontinuity between the treatment of solid combustion waste (ash) and gaseous emissions, or the robustness in the enforcement of the Industrial Emissions Directive is an internal conflict within the electricity regulatory framework. The conflict is likely to reduce the willingness of Developer Operators to invest in carbon abatement assets, or to simply opt out of the continuity of generation scheme within the Industrial Emissions Directive (for an explanation of opt out and opt in schemes see Section 2.10.3). This will mean that the opt out generation plant with only generate for a limited number of hours, with the likelihood that the generation gap will be filled by other carbon emitting generating plant operating for longer or within other member states and importing the electricity.

Theme 2 Origins of Regulatory Risk

The respondents were asked what they considered the origins of regulatory uncertainty or volatility and how this affects their business, the advice they give, or regulations put in place.

A general definition and measurement of 'uncertainty', whether this relates to a regulatory framework or other business risks is not straightforward since it is ultimately an unobservable variable.¹⁸⁵⁸ However, it is known that uncertainty increases the option value of waiting before committing to an investment,¹⁸⁵⁹ and additionally it is known that the hurdle rate¹⁸⁶⁰ an investment must reach before an investment commitment is made increases.¹⁸⁶¹ The perception of uncertainty in the business environment can originate simply from rapid economic changes such as the financial crisis of 2008.¹⁸⁶²

The themes which emerged in relation to the origin of regulatory risk can be summarised as (i) political, (ii) un-forecasted regulatory change and (iii) regulatory inconsistencies, each set out below

Theme 2.1 Political Risk

As has been stated widely, investors require confidence that when investment decisions are made, the regulatory authority (national regulators, the Commission or other EU institutions) will not cancel commitments made or significantly alter the rules governing the business case (An almost universal theme of respondents).¹⁸⁶³ This is an effect which was also brought out with regards to the UK specifically

¹⁸⁵⁸ Marko Melolinna, Helen Miller and Srdan Tatomir, 'Business investment, cost of capital and uncertainty in the United Kingdom - evidence from firm-level analysis' (2018) 17 Bank of England Staff Working Paper

¹⁸⁵⁹ Knut Are Aastveit, Gisle James Natvik and Sergio Sola, 'Economic uncertainty and the effectiveness of monetary policy' [2013] Norges Bank Working Paper No. 2013/17

¹⁸⁶⁰ 'hurdle rate' is the minimum rate that a company expects to earn when investing in a project. Hence the hurdle rate is also referred to as the company's required rate of return or target rate. In order for a project to be accepted, its internal rate of return must equal or exceed the hurdle rate - <https://www.accountingcoach.com/blog/what-is-hurdle-rate>

¹⁸⁶¹ Nicholas Bloom, 'Fluctuations in Uncertainty' (2014) 28(2) Journal of Economic Perspectives, 153

¹⁸⁶² Patrick Bolton, Neng Wang and Jinqiang Yang, 'Investment under Uncertainty and the Value of Real and Financial Flexibility' [2014] American Finance Association; See Also Avinash Dixit and Robert Pindyck *Investment under Uncertainty* (Princeton University Press, 1994)

¹⁸⁶³ Cameron Hepburn, 'Regulation by Prices, Quantities, or Both: A Review of Instrument Choice', (2006) 22 (2) Oxford Review of Economic Policy, 225; See also Harri Kalimo, Filip Sedefov and Max Jansson, 'Market definition as value reconciliation: The case of renewable energy promotion under the WTO Agreement on Subsidies and Countervailing Measures', (2017) 17(3) International Environmental Agreements: Politics, Law and Economics; Colin Kirkpatrick, David Parker and Yin-Fang Zhang, 'Foreign Direct Investment in Infrastructure in Developing Countries: Does Regulation Make a Difference?', (2006) 15(1) Transnational Corporations; Dieter Helm, Cameron Hepburn and Richard Mash, 'Credible Carbon Policy', (2003) 19(3) Oxford Review of Economic Policy, 438; Henok Birhanu Asmelash, 'Energy subsidies and WTO dispute settlement: Why only renewable energy subsidies are challenged', (2015) 18 (2) Journal of International Economic Law, 261;

(Brexit) with reference being made to the 2018 Energy Barometer¹⁸⁶⁴ (Developer Operator 5 & External Legal Counsel 3).

Developer Operator 6 gave a useful summary of the origins of regulatory and business risk by stating that such risks really all circulate around political and policy issues. Political risks being reported as occurring in different timescales depending if the political issues are at national or EU level. Developer Operator 6 stated that issues occurring at national level can present more immediately than those at EU level. However, EU political and policy issues tend to be of a more fundamental nature. Developer Operator 6 finally stated that rule changes and changes in renewables support instruments (feed-in tariff and tradeable certificates) lower the predictability of the future and thus create a feeling of uncertainty.

Both Internal Legal Counsels reported a wider political concern present within the industry regarding the composition of national governments and that as the composition changes, so does their regulatory priorities. Internal Legal Counsel 1 stated that changes to Government ministers presented a regulatory risk at the national level saying,

'the concern is always brought into focus by [changes in Government]. With the rise of the Green Party [across the EU] there is a higher probability of Government priorities changing to a stricter enforcement of nuclear and coal closures.'

An example of this concern being the German government's declared policy to phase out nuclear power.¹⁸⁶⁵ With different coalition partners the phase out concept could be extended to coal and even gas fuelled power plant. The respondents therefore raised an overall concern at the competence¹⁸⁶⁶ still held by member states to determine the choice between energy sources set out in Article 194(2) TFEU. The Developer Operators (1, 4, and 6) stated a view that the competence to determine their national energy mix gave the individual member states considerable discretion in this area, a discretion that was not always used for objective reasons. An example given was the inability to obtain access to a

¹⁸⁶⁴ Malcolm Brinded, 'Energy Barometer' [2018] Energy Institute - listing the key issues as uncertainty around Brexit and the diversion of attention it is causing away from domestic policy; and investment and cost concerns as a result of political issues and oil price volatility

¹⁸⁶⁵ Norbert Rottgen Environment Minister 'The Federal Government's energy concept of 2010 and the transformation of the energy system of 2011'

¹⁸⁶⁶ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

renewables support scheme is England for onshore facilities (Developer Operator 1, 4, 5, 6 and 7). Another example being the French Government's requirement/request for certain offshore renewable facilities to reduce their support tariff level by 30% or effectively have their support contracts cancelled (Internal Legal Counsel 2 Developer Operator 4, 6 and 7).

It is clear that respondents view regulatory change as highly political in origin, with regulatory practice and direction being dictated by political priorities. The responses show that the Developer Operators view elections and even changes in ministerial appointments as potential sources of regulatory change.

Theme 2.2 Regulatory Volatility – Rapid Unforecastable Regulatory Change

All respondents, other than the Regulatory respondent who would not express a view, reported unforecastable regulatory change at either the national or EU level as a negative, and issues of most concern are those which occur rapidly without giving utility companies time to mitigate the potential revenue impact. To this end some respondents stated that they believed that regulatory change could be made faster, based on the exclusive competence of the Commission. The respondents stated as an example the development of the state aid guidelines by the Commission, effectively driving the legal basis of the assessment of state aid (Internal Legal Counsel 1, External Legal Counsel 3, Developer Operator 5 and 7).

As a further example of how fast things can change and that issues can come from 'nowhere' to be a top environmental concern, the current concerns over plastic was outlined (Developer Operator 4, 6 and 7 and Climate Change Scientist). The issue of marine plastic as an environmental concern has been known from the early 2000's,¹⁸⁶⁷ but with little public perception of the issue. As a result of the issue being given publicity by Sir David Attenborough¹⁸⁶⁸ and others, companies are now shunning plastic across multiple business sectors to such an extent that the EU has published a communication¹⁸⁶⁹ on the subject to provide a framework within which the Commission and the other institutions of the EU can work to reduce single use plastic.¹⁸⁷⁰

¹⁸⁶⁷ S Sheavly and K Register, 'Marine Debris & Plastics: Environmental Concerns, Sources, Impacts and Solutions' (2007) 15(4) *Journal of Polymers and the Environment*, 301; James Coe and Donald Rogers *Marine debris: sources, impacts, and solutions* (Springer, 2012); Birgitta Gatersleben, Linda Steg and Charles Vlek, 'Measurement and Determinants of Environmentally Significant Consumer Behavior' (2002) 34(3) *Environment and Behavior*, 335

¹⁸⁶⁸ Binoy Kampmark, 'From Plastic to Drastic' (2018) available <https://www.thenews.com.pk/print/271322-from-plastic-to-drastic>; Sir David Attenborough: 'I'm astonished' by Blue Planet plastic impact - <https://www.bbc.co.uk/newsround/44586290>

¹⁸⁶⁹ EU Communication Com(2018) 28 'A European Strategy for Plastics in a Circular Economy'

¹⁸⁷⁰ On 28 May 2018, the Commission issued a proposal for a Directive banning or reducing

Therefore, by extension, if a similar concern was to be raised with regards to any aspect of renewable or other forms of electricity generation, a considerable number of facilities could be rendered operationally and economically untenable (Operator Developer 3 Internal Legal Council 1). Another example given was air quality, where a few years ago little was heard on the subject, whereas now the UK Government has already been the subject of a domestic Supreme Court case on the subject.¹⁸⁷¹ Developer Operator 4 and 6 reported that should the same focus be levied on climate change and carbon emissions, the policy landscape at both EU and member state level could change rapidly and in unpredictable ways.

Both Internal Legal Counsels went on to raise concerns with regards to plant closures, predominately coal and nuclear in the respondents' host countries without a clear route as to how new generation capacity is to be put in place to fulfil this generation gap. These respondents stated that such a programme may require the importation of additional electricity from external parties with the logical generation type being renewables to fill this generation gap. However, at the same time an export/import restriction is in place between member states due to the nationally focussed renewable energy support schemes. The Internal Legal Counsel 1 stating:

there is no point closing [coal]¹⁸⁷² plants, without a plan as to how the generation gap will be filled. There is also no point closing nuclear plants [domestically]¹⁸⁷³ to import nuclear power from France.

The finding of a general restriction related to the flows of renewable energy between member states outlined in *Essent*¹⁸⁷⁴ and *Ålands Vindkraft*¹⁸⁷⁵ clearly underlines a concern that any shortfall in electricity will need to be made up from coal or gas which is carbon emitting.

Additionally, the finding in *Green Network*¹⁸⁷⁶ the Commission's competence to negotiate renewable recognition agreements with third countries simply made both the Internal Legal Counsel and Developer Operator respondents concerned over the timescale and reactivity of the Commission in this regard (Internal Legal Counsel 1 and 2, Developer Operators 4, 5 and 7).

¹⁰ single-use plastics causing marine litter - EU Strategy on Single Use Plastic - https://ec.europa.eu/commission/news/single-use-plastics-2018-may-28_en accessed 1 July 2018

¹⁸⁷¹ R (on the application of ClientEarth) (Appellant) v Secretary of State for the Environment, Food and Rural Affairs (Respondent) [2015] UKSC 28 – following a preliminary reference to the CJEU Case C-404/13 R (on the application of ClientEarth) v The Secretary of State for the Environment, Food and Rural Affairs ECLI:EU:C:2013:805

¹⁸⁷² Names of coal plants redacted to preserve anonymity

¹⁸⁷³ Name of country redacted to preserve anonymity

¹⁸⁷⁴ C-204/12 *Essent Belgium NV v Vlaamse Reguleringinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014:2192

¹⁸⁷⁵ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁸⁷⁶ Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

The finding in *Essent 2*¹⁸⁷⁷ that restricting network flows is a conflict with the free movement of goods obligations in the TFEU was seen as a positive position by the Developer Operators. However, this only reinforced their view that it would be coal, gas and nuclear that would be used to fill any power gap which was seen as counter to the overriding objective¹⁸⁷⁸ of carbon emissions reduction (Internal Legal Counsel 1, Developer Operators 4, 5 and 7).

Respondents also reported the Industrial Emissions Directive¹⁸⁷⁹ as a source of regulatory volatility, due to the potential to apply enhanced criteria within any best available techniques assessment¹⁸⁸⁰ (Internal Legal Counsel 1 and Developer Operator 4 and 7). Respondents stating that the concept of best available techniques is likely to develop and evolve overtime thus enhancing the requirement to abate emissions. Developer Operator 5 made an insightful point regarding the use of a single style of renewables support scheme, namely a feed-in tariff based on generated output, with the scheme's support price determined using a fixed set of criteria and how such a practice is an origin for risk as the effect of doing so focusses the generation portfolio on a single technology by stating

increasingly supporting generating capacity via one type of support mechanism brings about a monoculture in terms of the generating plant that is developed, which is sub-optimal as it is not robust to a paradigm shift in fuel price or regulation.

This means that technological innovation is focussed down a single track. Also, with only one type of generating facility being supported should the regulatory framework change due to an internal or external policy paradigm shift, utility companies may well find that a major part of their asset portfolio is economically or operationally stranded. Developer Operator 7 stating that a mix of technologies spreads regulatory risk and allows the generation function to better match demand both at peak and demand shape which after all was its *raison d'être*.

In looking at the development of generating technology Developer Operator 4 discussed the concept of 'regulatory lag', in that the regulatory framework seems to lag technology or market practice. Meaning that industry regulation is responsive

¹⁸⁷⁷ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

¹⁸⁷⁸ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁸⁷⁹ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

¹⁸⁸⁰ A best available technique assessment is an assessment of appropriate emission levels from a generating asset should that asset be using best available techniques to monitor and remediate emissions – Article 13 Industrial Emissions Directive

to change and not leading change or putting in place, ahead of need, the framework required – stating that regulators, both at the EU and national level, always seem to be ‘fighting the previous war’. Developer Operator 4 stated that photovoltaic modules (solar panels) which have reduced in price considerably, however, national regulators across the EU seem to be at odds with the industry’s view of the timeline for the continued reduction in capital costs. Also the EU’s tariff barriers and protectionist approach to the import of solar panels has not protected a panel manufacturing industry in the EU as none existed, but has simply increased the capital cost of these items making solar renewable facilities less likely to be developed.¹⁸⁸¹ Developer Operator 4 stating that the EU’s undertaking to end the anti-dumping measures (tariff barriers) on solar panels from 3 September 2018 was a measure which took nearly two years for the Commission to complete and as such simply delayed the development of renewable generation.¹⁸⁸² Developer Operator 4 closed this point by saying that when consideration is given to the pace of technological change in module¹⁸⁸³ design and the regulatory timing mismatch this is a combination only likely to be a source of regulatory volatility.

Several of the Developer Operator respondents (1, 3 and 6) stated that regulatory volatility, be that at an EU or member state level, was an issue that would lead to higher rates of return being required before an investment in a renewable generating facility would be approved. Thus, reducing in the number of sites where wind and solar resources would be such that these rates of return will be achieved and hence having a detrimental effect on the development of renewable generating facilities.

Theme 2.3 Poorly Drafted Framework & Regulatory Inconsistencies

Regulatory inconsistencies are instances where different elements of the regulatory framework have either conflicting goals or practices. The inconsistencies therefore undermine the ability of either or both parts of the regulatory framework to achieve their objectives.

This theme initially considers the effects of a poorly drafted regulatory framework before looking at the inconsistencies between parts of the framework.

¹⁸⁸¹ Article 8 of EU Regulation 1225/2009 ‘on protection against dumped imports from countries not members of the European Community’ OJ L 343/51, allows anti-dumping enquiries to be conducted by the Commission – tariff barriers put in place for solar panels from China was equal 64.9%.

¹⁸⁸² EU Notice (2018/C 95/06) of the impending expiry of certain anti-dumping measures related to Crystalline silicon photovoltaic modules and key component OJ C 95/6

¹⁸⁸³ When used for commercial facilities photovoltaic cells are grouped into a component called a module - https://www.jinkosolar.com/product_256.html?lan=en accessed 23 September 2018

Developer Operator 2 stated, as an example of how poor regulatory drafting can undermine an industry, that Germany had initially progressed its renewables construction programme with haste. Developer Operator 2 reporting that the initial prices within the renewable support mechanisms were too high and thus a rush of potential and actual projects ensued. Germany via its competence to determine the details of the support scheme then restricted its renewables support programme to 700MW of new capacity per year and the economies of scale were lost and the output cost of renewables increased. Germany then took measures to suppress the price increases again within the competence granted to member states within Article 194(1) TFEU. Thus, a poorly conceived and drafted initial national support framework caused rapid redrafting of the framework, whereupon further problems occurred resulting in regulatory volatility.

Internal Legal Counsel 1 and External Legal Counsel 3 gave a further example of how poorly conceived EU instruments lead to perverse investment signals. They used the EU's guidelines on state aid which led to a rush for cogeneration plants within industrial facilities, as intensive energy users sought to avoid network changes and green levies following the CJEU's judgements in *Austrian Green Levy*¹⁸⁸⁴ and *German Green Levy*¹⁸⁸⁵ (See Sections 3.5.11 and 3.5.12). Within a few years of the judgments the Commission's state aid guidance documents allowed a reduced surcharge for self-generation¹⁸⁸⁶ and an exemption for intensive energy users from green levies¹⁸⁸⁷ (See Section 3.5.12). Therefore, the Commission has changed the legal understanding of state aid and how it will apply Article 107 TFEU. The Commission has put in place an element of the regulatory framework that is once again in diagonal conflict with the EU's free trade principles.

Developer Operator 5 gives an interesting counter perspective regarding the pace of regulatory change within the EU and how, due to the number of countries and the decision-making process, regulatory change is in reality slow, which creates a form of regulatory stability not to be overlooked.

¹⁸⁸⁴ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁸⁸⁵ Commission Decision 2015/1585, Aid Scheme SA 33995 –“ implemented by Germany for the support of renewable electricity and of energy-intensive users”, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

¹⁸⁸⁶ European Commission, Decision of 19 December 2017 Reduced surcharge for self-generation under EEG 2017 SA.38632

¹⁸⁸⁷ Commission Decision of 28 March 2018 relating to the offshore-surcharge reduction for railway undertakings in Germany SA.50395; See also Commission Decision of 28 March 2018 relating to reductions in the offshore surcharge for electro-intensive undertakings and reductions on the CHP surcharge for electricity produced from waste gases in Germany SA.49416

Both Internal Legal Counsels and External Legal Counsel 1 stated in summary that inconsistencies within the regulatory framework bring about regulatory risk and thus regulatory volatility, as changes can be made at short notice to patch¹⁸⁸⁸ over these inconsistencies. The respondents on this point gave the examples of (i) the number of free allowances made available to industrial and utility companies under the EU-ETS (See Section 2.10.1) and the need for the reserve account¹⁸⁸⁹ to reduce the number of allowances available in the EU-ETS (a practice which, if not undertaken correctly, has been found by the Commission and the CJEU to be state aid and thus in diagonal conflict with Article 107 TFEU) and (ii) the removal of embedded benefits from distribution connected renewable generation as it was both EU and national regulators that had encouraged the spread of the practice in the first place (See Section 3.5.13).

Theme 3 Regulatory Risk Management & Mitigation

The management of regulatory risk is a process led by the developer operators to ensure that both forecastable and unforecastable regulatory change are undertaken in a manner that does not undermine the returns forecast in the investment business model of a generating asset.

The management process therefore takes the form of monitoring and tracking regulatory risk as well as mitigating against such risks. The overall theme is divided into sub-themes such as tracking, forecasting, lobbying and mitigation measures, each analysed below.

Theme 3.1 Tracking and Articulating Regulatory Risk

It is clear from the research undertaken that the renewable electricity sector confronts an evolving regulatory landscape.¹⁸⁹⁰ Therefore market participants (e.g. developer operators, regulators, investors) would generally be considered as having a requirement to monitor and track this landscape.

As stated in responding to the evolving regulatory landscape the respondents all described the phenomenon of regulatory change as 'regulatory risk'

¹⁸⁸⁸ patching, are policies and regulatory instruments enacted in order to correct flaws or allow the regulatory framework to adapt to changing circumstances - Michael Howlett and Jeremy Rayner, 'Patching v packaging in policy formulation: assessing policy portfolio design' (2013) 1(2) Politics & Governance, 170, 177

¹⁸⁸⁹ The reserve account is a mechanism whereby the Commission places emissions allowances in an account effectively outside the normal market mechanism – Described in Section 2.10.1

¹⁸⁹⁰ Daniel Tulloch, Ivan Diaz-Rainey and I Premachandra, 'The impact of regulatory change on EU energy utility returns: the three liberalization packages' (2018) 50(9) Applied Economics; See Also David Coen and Chris Doyle, 'Liberalisation of Utilities and Evolving European Regulation' (2003) Economic Outlook

and thus negative. Developer Operator respondents distinguished between risks at EU and member state level, however, they track and seek to manage these events as part of a co-ordinated regulatory management task.

The respondents stated that in articulating a risk in a register and in the assessment of mitigation measures, consideration would be given to the source of the governance of the risk, be that at the EU or member state level.

Interestingly, no respondents in any category stated they tracked or considered changes in the regulatory framework as an upside, with several of the Developer Operators (Developer Operator 1, 2, 4, 6 and 7) simply stating that if enhanced revenues occurred within a project because of regulatory change this was not something they needed to worry about or account for in a financial model.

When asked if respondents were concerned that regulators might seek the refunding of enhanced returns as part of a 'gain-share' mechanism to mitigate against over-compensation, as was done for Electricity de France's (EDF) Hinkley Point C nuclear project,¹⁸⁹¹ all except one of the respondents simply stated they had not thought about it. Developer Operator 6, however, considered that a gain-share¹⁸⁹² mechanism was likely to become an increasing feature of renewables support schemes given the current expectation amongst national regulators is that wind-based renewables will have an operational price comparable with coal and gas fuelled generation (See Section 2.7 and the UK's Hornsea 3 Project)¹⁸⁹³ and therefore anything above reasonable returns could be clawed back by the regulator. Developer Operator 6 went on to state that future renewables support schemes are likely to have both an operational and rate of return gain-share mechanism to mitigate against over-compensation by individual national.

In seeking to understand how market participants define and seek to quantify regulatory risk, respondents were asked what elements of the regulatory framework they track and what issues they look at as a determinant of risk. Respondents were also asked about how they go about seeking to bring the many disparate pieces of information gathered into a clear articulation of the risk they evidently seek to manage and mitigate.

¹⁸⁹¹ Nicole Robins and Tridevi Chakma, 'State Aid in Energy under the Spotlight: The Implications of the Hinkley Point Decision' (2016) 2 European State Aid Law Quarterly, 247

¹⁸⁹² A gain-share mechanism is where the price within the generation support scheme, which is calculated on the basis of projected construction and operating costs, including a reasonable profit, will be compared to the weighted average of wholesale prices for electricity and monies received. Within the Hinkley Point C support scheme there are two 'gain-share' mechanisms, the first of which concerns the costs of production, and the second, the rate of return on equity. Therefore should actual monies received or costs incurred mean that the operator of the plant receives returns above those envisaged at the point of investment it is required that monies are returned to the support scheme management undertaking in the UK. - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 5

¹⁸⁹³ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

The respondents firstly stated that analysis was undertaken by bringing together advice from a series of sources, with each looking at a different timescale (Internal Legal Counsel 1 and 2). The most pressing matters will be considered and managed by specialist in-house regulation teams, with these teams being composed of lawyers, economists and engineers (Internal Legal Counsel 1 and 2; Developer Operators 1, 3, 4, 5, 6 and 7). Additionally, External Legal Counsel respondents also reported that they would be asked to provide specific pieces of written advice on topics instructed by their clients (Internal Legal Counsel 1 and 2 as well as External Legal Counsel 1, 2 and 3). In fact, the situation was summarised by the responses from the External Legal Counsel when they said, '*as a law firm, an analysis of current and potential future regulations is the main reason clients seek our advice*' (External Legal Counsel 1) and '*regulatory risk as a down side is at the core of the advice given.*' (External Legal Counsel 2), and lastly '*regulatory risk assessment is our raison d'être*' (External Legal Counsel 3).

In looking to the longer term, factors associated with regulatory risk advice is taken from academics and economic consultancies (Internal Legal Counsel 1 and 2) and seem to be sought based on a slightly more speculative 'think piece' on potential future regulations.

In seeking to understand why such effort is put into understanding the future of regulation by the asset developing and owning side of the industry, the response from Developer Operator 5 provides a good summary of why and how regulatory change is tracked by

undertaking regulatory studies to determine potential futures. This is done so that we can see the effect of the regulatory change coming early enough to do something about it.

The responses also indicated that the articulation of regulatory risk was done via the development of a series of scenarios (Developer Operator 1, 3, 4, 5, 6 and 7; Investment Fund Manager), with the scenarios taking account of the legal changes to the regulatory framework at both EU and national level and then translating these changes into economic outcomes for the assets involved. The Developer Operator respondents also confirmed that the scenarios were effectively translated into a series of 'forward price curves and cash flows' (Developer Operator 1, 3, 4, 5, 6 and 7; Investment Fund Manager). It was also made clear that the price curves allowed generating facilities to be '*economically assessed at any point in the life cycle of the asset from pre-investment to late life closure*' (Developer Operator 5). Developer Operator 5 went on to give a note of caution with regards to the development of

forward price curves from the regulatory scenarios, stating, ‘by effectively reducing everything to a price curve these scenarios get blurred at the edges’. This meaning that irrespective of the exact details of the regulatory scenario, economic modelling may develop the same market price level and as such the same or similar plant portfolio outcomes, in terms of investment and plant closure.

In terms of taking business decisions based on the articulation of regulatory risk, External Legal Counsel 1 and Developer Operator 6 stated that the subject was a standing feature of the company’s board agenda (it should be noted that these two respondents are not from the same company).

This level of risk identification is believed to be part of a strong risk governance culture within the Operator Developer community,¹⁸⁹⁴ with the aggregation and articulation of the risks of conducting business in a highly regulated market seen as key to maintaining returns and asset remuneration levels when those very things are governed by the regulatory framework.

It is also clear from the fact that regulatory change is always perceived to be negative, and the language of ‘risk’ being constantly used when questioned about regulatory change indicates a low risk appetite. The reliance on external legal advice for specific elements of the articulation of the regulatory risks shows that Developer Operators see the source of risk to be effectively legal (legislative and case law driven).

Theme 3.2 Management Frameworks for Regulatory Risk

In addition to the process of regulatory risk identification, outlined in Theme 3.1 above, several respondents stated that they seek to use a structured approach to the management of regulatory risks.

The responses from Internal Legal Counsel 2 and Developer Operator 7 were the most detailed and as such their comments are relied upon in what is set out below.

Internal Legal Counsel 2 stated that ‘regulatory issues’ were logged, and the issues were then assessed by a risk assessment team to understand if the ‘issue’ was a risk, with potential downside potential for revenues, and the magnitude of the downside. It was reported that the risks are considered in terms of their potential for revenue reduction (low, medium or high), with an associated probability of the event occurring (low, medium or high). Therefore, events that were categorised as ‘high,

¹⁸⁹⁴ Thematic Review on Risk Governance - http://www.fsb.org/wp-content/uploads/r_130212.pdf accessed 21 July 2018

high' [high impact on revenues and high probability of occurring] were managed as a business priority.

Developer Operator 7 stated that each risk identified is assigned to a category, (i) track, (ii) monitor or (iii) engage, with each assigned to a member of staff. For those marked as 'engage', a management and mitigation strategy is developed which is dependent on the drivers for the regulatory change and the body within which control rests for such change (competency¹⁸⁹⁵ should the measure be regarded as being controlled by an EU institution or member state). Developer Operator 7 also stated that applicable meetings with Government at the levels of Director and working level were held dependent on who holds the competency. The initial contact would be to confirm the intent of the policy or regulatory change, understand the thinking behind the policy and then make suggestions.

The Insurance provider also stated that regulatory issues would be logged and managed by compliance teams. The Insurance provider stated that this was done to ensure that insurance policy terms were based on knowledge of the current and future regulatory framework.

This structured approach is a clear indication of the effort that the Developer Operator and Investment sectors of the industry expend in the management of regulatory issues and asset revenues. The respondents made no distinction with regards to the need to identify the issue, as to whether it was at the EU or national level. The only distinction came from who internally the issue would be assigned to manage, and technical details related to the regulatory change, such as whether the issue related to a C&C or market-based structure and who holds the competency for the regulatory instrument. Although not looking to maintain revenues flowing from generation assets, the response from the Insurance provider was also indicative of the need to be aware of regulatory risks so that insurance policies were not based on assumptions about the regulatory frameworks that are no longer valid and therefore create a risk profile within the insurance policy that is not appropriately funded by the insurance premium.

¹⁸⁹⁵ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

Theme 3.3 Active Management of Regulatory Risk - Lobbying

One of the clear outputs of the assessment, reporting and articulation of regulatory risk is the management of that risk. The management is undertaken in several ways from active lobbying of regulators and legislators (EU and national), to the responding to industry consultation documents and participation in industry wide consultative bodies at both the EU and national level.

Internal Legal Counsel 1 and 2 both reported that their respective organisations have offices in both their national capitals and Brussels with the specific purpose of ‘holding discussions’¹⁸⁹⁶ with regulators and legislators, with these activities being undertaken at EU and national level dependent on the issue or risk at hand. A dual office structure was also reported by Developer Operator 1, 4, 5, 6 and 7, with the express purpose of influencing regulators and legislators - ‘lobbying’.

The three External Legal Counsel respondents disclosed having offices in almost all national capitals across the EU (not surprising given their status as large international law firms). However, importantly the three External Legal Counsel respondents all indicated their office size in Brussels was larger than would be justified by the volume of work generated by transactions purely focussed on the Belgium market, and that the increased size of the office resulted from work specifically associated with the EU legislators, the Commission, CJEU and increasingly ACER.¹⁸⁹⁷ Client instructions were received either directly from the EU, and its various institutions, or from corporate clients, to either produce specialist advice on the interpretation of EU law or assist in the drafting of materials submitted by these clients to EU institutions. As an example of the types of response given in this area External Legal Counsel 1 stated

we seek to stay close to all our clients and work for all sides of the industry so that a rounded view can be taken. In staying at the forefront of the regulatory debate allows early warning of changes to be understood by us as a business as early as possible.

The level of client instructions for the External Legal Counsel 1 and 3 via their Brussels office was reported to be as a direct result of the complexity of the

¹⁸⁹⁶ Both of the Internal Legal Counsel respondents were very careful not to use the word ‘lobbying’ and made it clear that they regarded the use of such phraseology as holding a negative business connotation and could, with regards to certain jurisdictions, be regarded as a legally prohibited activity (e.g. the UK’s ‘Transparency of Lobbying, Non-Party Campaigning and Trade Union Administration Act 2014’).

¹⁸⁹⁷ ACER - Agency for the Cooperation of Energy Regulators - <https://www.acer.europa.eu/en/Pages/default.aspx> accessed 16 July 2018

renewables regulatory framework – simply the number of Directives and Regulations involved. As a result of this, corporate clients sought written advice on how to interpret the legislation in relation to different business issues. Additionally, as set out above in Theme 1.1 the External Legal Counsel 1 and 2 were actively engaged in providing advice on issues related to the conflict between primary EU law and the renewables regulatory framework.

Both Internal Legal Counsel respondents indicated that they would be involved in the development and delivery of targeted ‘business discussions’ with EU and national legislators and regulators.

The Developer Operator respondents were less guarded when it came to openly discussing lobbying to describe what they thought they were doing. The Developer Operator respondents generally stated that they lobby EU legislators, the Commission, national governments and EU and national regulators to ‘highlight the importance of regulatory change’ (Developer Operator 1). The Developer Operator respondents also stated that they consider directly the political dimension, looking at the impact on investment, jobs and public opinion of any change. They also stated they would prepare any response or policy statement by looking at the core principles of carbon emission abatement, security of supply, effect on consumers and long-term jobs. Developer Operator 5 put it simply by stating that any policy statement cannot be purely a *‘renewables is best or narrow self-interest approach as this can be easily discounted at all levels from the EU to a local authority’*.

The submission of a legal or regulatory position to EU and national legislators and regulators, related to applicable matters, was also reported to take place using industry trade associations such as the European Wind Energy Association¹⁸⁹⁸ or Energy UK¹⁸⁹⁹ (Internal Legal Counsel 1 and 2, Developer Operator 1, 4, 5, 6 and 7).

Certain Developer Operators also stated that they can take a public affairs angle to an issue if needed using both local and national media to project messages (Developer Operator 1, 4, 5, 6 and 7) as did Internal Legal Counsel 2.

Irrespective of what it is called (lobbying or business discussions) the business focus that is given to developing and managing the delivery of applicable regulatory positions of the Developer Operator community is very high.

The clear use made by the Developer Operator community of External Legal Counsel to develop a regulatory position and to respond to positions developed by EU and national legislators and regulators gives an indication of the importance of the issues involved.

¹⁸⁹⁸ <http://www.ewea.org>

¹⁸⁹⁹ <https://www.energy-uk.org.uk/>

The Investment Fund Manager was less focussed on lobbying activities and simply reported a focus on receiving indemnities against regulatory changes that would have a negative effect on asset or transaction values from the vendors of the assets purchased and managed. Similarly, the Insurance respondent reported that they do little with regards to lobbying on the renewable electricity regulatory framework.

The Regulator respondent stated on the other side of the industry that they will hold both bilateral and multilateral discussions with the renewable electricity industry on the operation and development of the renewable regulatory framework. As a national regulator, most of this interaction was focussed on the national regulatory framework. The Regulator respondent reported that they take the views of industry into account via responses to formal consultation documents and industry wide consultative forums which operate on most important issues. The use of responses to formal consultation documents and industry consultative forums was also seen as a valuable means of engaging with the regulator by the two Internal Legal Counsel and all seven Developer Operators respondents.

The Regulator respondent stated that as a national regulator they do not negotiate and do not respond to lobbying. However, the effort put in by the Developer Operators to what they call lobbying, must mean some exchange is taking place – see Theme 3.4.

Theme 3.4 Active Management of Regulatory Risk - Negotiation

As a special form of lobbying, several of the Developer Operators reported themselves as undertaking specific negotiations with EU and national regulators, as well as the Commission.

Developer Operator 1 reported that in relation to [a recent novel technology]¹⁹⁰⁰ investment the regulations were heavily negotiated to shape those very regulations. Developer Operator 5 reported that in seeking to negotiate with the regulator there was a requirement to *'pick your battles, such that [company name]¹⁹⁰¹ strengths can be brought to the fore'*. Direct negotiation of regulations with EU or national regulators is seen by Developer Operators to have the advantage of being a one on one discussion about revenue and services to be provided. Developer Operator 7 gave an insight as to how these negotiations / discussions take place by stating that they occur at both Director and working level. It is also clear that such discussions occur directly with the Commission in relation to decisions to be made

¹⁹⁰⁰ Exact project type and location redacted to preserve anonymity

¹⁹⁰¹ Company name redacted to preserve anonymity

related to specific business. Furthermore, Internal Legal Counsel 2 reported direct negotiation with the Commission in relation to the feed-in tariff for [name of power facility]¹⁹⁰² In relation to its state aid status.

The Regulator respondent however, reported a very different view of these discussions and sought to be clear that negotiations were not taking place by stating discussions were undertaken ‘*by the holding of formal and informal consultations with industry players*’. The Regulatory respondent also sought to explain that the industry forums/workshops are not negotiating panels but are in place to gather knowledge and build consensus for change. Additionally, stating that:-

there is no real negotiation as this would be the same as a commercial contract, but the [regulator]¹⁹⁰³ can take the views of industry players into account on the operation of regulations.

Lastly, [Respondent]¹⁹⁰⁴ reported the considerable negotiations that took place with the French government with regards to the renegotiation of the feed-in tariff level of certain French offshore wind farm projects.¹⁹⁰⁵ The negotiations reported as bringing together legal, regulatory and economic arguments. In pursuing the discussions, these were held at both national and local government levels in relation to the amount of inward investment, the readiness of the developer operator to use the domestic supply chain and job creation.

Irrespective of the ‘negotiations’ label, it is clear that one on one discussions with the regulators (both EU and national), the Commission and governments are taking place. The Developer Operators and Regulatory respondents have made it clear that between written consultations and industry forums a considerable amount of information flows and number of discussions are held relating to the future of regulatory policy. It is also apparent that the Developer Operators see these discussions and information flows as a tool for managing and mitigating regulatory risk.

Theme 3.5 Active Management of Regulatory Risk – Forecasting Future Regulations

The forecasting of future regulations is reported by most respondents to be a key mitigation tool with regards to regulatory risk.

¹⁹⁰² Name of power plant redacted to preserve anonymity

¹⁹⁰³ The exact nature of the regulator redacted to maintain anonymity

¹⁹⁰⁴ Respondent redacted to preserve anonymity

¹⁹⁰⁵ <https://www.offshorewind.biz/2018/06/20/france-reduces-feed-in-tariffs-for-6-offshore-wind-projects/>

The Internal Legal Counsel both declared that they seek to manage the development of legal advice as to the future of regulation such that this can be used in the maturing of long-term regulatory scenarios. Internal Legal Counsel 2 stated that a certain level of regulatory risk and importantly regulatory volatility needed to be recognised in any long-term scenario.

Internal Legal Counsel 1 and External Legal Counsel 3 specifically reported that the ending of the diagonal conflict between free movement and the renewable regulatory framework was a clear part of their view of the future.

The Developer Operators (Developer Operator 4, 5, 7 and Investment Fund Manager) reported that the forecasting of the future regulatory framework should have a duration similar to the design life of the assets in which they invest. With the design life of a generating plant being 25 to 40 years, it is clear that the Developer Operators are seeking to articulate their understanding of the regulatory future for a considerable period.

Therefore, in looking to foster forecasts of regulatory frameworks over that period, the Developer Operators reported that they look to (i) certain fundamental principles continuing, such as – carbon reduction in line with the Paris COP 21 climate agreement (Developer Operator 5, 6 and Climate Scientist), (ii) market forces and market based regulation replacing command and control¹⁹⁰⁶ regulation, to ensure economic investment in generating plant (Developer Operator 1, 5, 6 and 7 and Climate Scientist) and (iii) renewables regulatory framework focusing on emission trading (e.g. EU-ETS) (Internal Legal Counsel 1, 2 Developer Operator 1, 4, 5, 6 and 7).

Theme 3.6 Active Management of Regulatory Risk – Rate of Return

In seeking to understand the perception of long-term price risk, Developer Operator 1 summarised the situation, stating the price of electricity was unforecastable over a timescale equivalent to the operational life of generation assets.¹⁹⁰⁷ Therefore, in order to continue to invest in generation assets using a single digit rate of return, a revenue support mechanism is required. Developer Operator 1 maintained that the difference between the electricity industry and other capital-intensive industries

¹⁹⁰⁶ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

¹⁹⁰⁷ The operational life of generating assets can be over 40 years (55yrs assumed for financial planning purposes) - [Sabrina Schulz and Julian Schwartzkopff, 'G7 Coal Phase Out Germany' [(2015) available https://www.e3g.org/docs/Germany_G7_coal_analysis_September_2015.pdf accessed 2 October 2018] when the forward price curve on traded markets is broadly 3 to 5 years.
<https://www.energymarketprice.com/sitepage.asp?act=ps&pid=93&pid=12>

where prices are also not known over the long-term, is that in these industries the rate of return is much higher. **[Note:** oil Company investments are reported to obtain circa 80% return on investment although the risk structure is much higher;¹⁹⁰⁸ with mining ranging from 12% to 14%]¹⁹⁰⁹

In response to the perceived regulatory risks, most respondents declared that a higher rate of return should be applied in asset financial models at the time of the investment decision (both Internal Legal Counsel, all 3 External Legal Counsel, Developer Operator 1, 3, 4, 5, 6 and 7, Investment Fund Manager). The specific regulatory risks reported in this context were (i) diagonal conflict between the renewable regulatory framework and free movement (both Internal Legal Counsel, External Legal Counsel 2 and 3, Developer Operator 1, 4, 5, 6 and 7, Investment Fund Manager); (ii) the ending of the feed-in tariff system in the context of a state aid funding – another diagonal conflict (Internal Legal Counsel 2, External Legal Counsel 3, Developer Operator 5, 6 and 7), (iii) the ending of priority dispatch¹⁹¹⁰ (both Internal Legal Counsel, all 3 External Legal Counsel, all 7 Developer Operators, Investment Fund Manager) and (iv) ending of embedded benefits ((both Internal Legal Counsel, all 3 External Legal Counsel, Developer Operators 1, 4, 5, 6 and 7).

Additionally, the respondents reported that the feed-in tariffs granted to currently operating facilities were at a price above the current and forecast future spot price for the wholesale market (with a few using a phrase of regulatory contango¹⁹¹¹ - Developer Operator 4, 5, 6, 7). This was reported by several respondents to create a risk that retrospective price reductions could occur to the feed-in tariff because of regulatory determination, this having occurred in Spain¹⁹¹² and Italy¹⁹¹³ and as such could become more widespread. As such a higher initial rate of return would be necessary for renewable generation (both Internal Legal Counsel, Operator Developer 1, 3, 4, 5, 6, 7 and Investment Fund Manager).

¹⁹⁰⁸ Sam Carmalt *The Economics of Oil: A primer including, geology, economics, energy, politics* (Springer, 2017)

¹⁹⁰⁹ Aneta Michalak, 'Expected Return on Capital in Mining Industry' in Ali Al-Juboury (ed) *Contributions to Mineralization* (InTeach, 2018)

¹⁹¹⁰ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

¹⁹¹¹ A market is said to be in Contango if the price of a feed-in tariff is above the expected future wholesale market price

¹⁹¹² Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf accessed 20 January 2017

¹⁹¹³ Decision 10/2015, *Scat Punti Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

The Regulator respondent, however, maintained that higher rates of return across renewable assets generally is not something the [Regulator]¹⁹¹⁴ would ‘support’ as it has the tendency to increase returns across all operational assets as price matching tends to occur as part of a process, whereby all assets in the sector simply increase the prices bid into the wholesale market. The Regulatory respondent, however, stated that in order to increase certainty of returns and thus maintain lower rates of return on transmission assets, a shorter depreciation period¹⁹¹⁵ [asset’s economic life] had been allowed and as such by extension a similar situation could be applied in the renewable energy sector. By effectively allowing assets owners to depreciate their assets over a shorter period, the level of price and regulatory certainty increases, as the economic model has a reduced forecast period.

Theme 4 – Future of Regulation

Across the respondents, comments were made relating to the future direction of the renewables regulatory framework. These comments covered the following areas, with each analysed in turn (i) focussing the regulatory framework on a market based carbon trading system which also focusses the oversight on the competency of the Commission (also discussed as Recommendation 1), (ii) increasing investment in the transmission system to change the network topology facilitating greater interconnection between member states, and (iii) development in how the industry is regulated and who has the competence¹⁹¹⁶ of regulatory oversight via the institutions of the EU and member states.

¹⁹¹⁴ Name of regulator redacted to preserve anonymity

¹⁹¹⁵ Depreciation is an accounting method of allocating the cost of a tangible asset over its useful life and is used to account for declines in value over time. Businesses depreciate long-term assets for both tax and accounting purposes. For tax purposes, businesses can deduct the cost of the tangible assets they purchase as business expenses; however, businesses must depreciate these assets in accordance with tax law relating to how and when the deduction deductions may be taken -

<https://www.investopedia.com/terms/d/depreciation.asp#ixzz5MvOCjj5N>

¹⁹¹⁶ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TEXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, ‘Competences in EU energy policy’ in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

Theme 4.1 – Focus Renewable Energy Regulatory Framework & Carbon Emission Pricing

Resulting from the need to increase renewable capacity to comply with the COP 21 Paris climate change agreement, several respondents proposed changing the focus of the regulatory framework from command and control¹⁹¹⁷ based regulatory structures to market based structures. The suggestion being that this would increase the cost efficiency of emission abatement solutions (Internal Legal Counsel 2, External Legal Counsel, Developer Operator 1, 5, 6 and 7, Climate Scientist). This proposal being made, as it is known that market operators will comply with C&C regulation irrespective of costs, whereas market-based regulation allows those best placed to make the largest changes for the least cost to do so and still derive applicable returns on any investment. Therefore, acknowledging that a cost-efficient renewable electricity facility in an EU country that can transport electricity across borders reduces carbon emissions in a more cost-efficient manner, than a facility built irrespective of cost to comply with a target. Hence, removing the free movement diagonal conflict within the renewable energy regulatory framework allows a higher level of carbon abatement for the same level of capital expenditure.

The suggestion is to strengthen the EU-ETS and the initiation of market mechanisms for the gases currently regulated via the Effort Sharing Decision.¹⁹¹⁸ This means that the EU-ETS is not simply carbon focussed, but is able to allow price discovery for a basket of gaseous emissions that more accurately reflect the emissions from thermal generation (Developer Operator 1, 5, 6 and 7, Climate Scientist). In making this change the regulatory framework is not focussed on a particular generation type but on a desired effect – carbon emission abatement. This means that the most effective generation type to reduce carbon emissions can be developed, based on the application of a market-based solution (Developer Operator 1, 4, 5, 6 and 7). Such a solution could potentially remove the need for feed-in tariff revenue support for renewable assets, as coal and gas fuelled generation fail to internalise the cost of carbon emission. Hence the regulatory framework's conflict with anti-state aid provisions (Article 107 TFEU) would be removed.

Using the EU-ETS as the primary focus of the regulatory framework is believed to harmonise and simplify the framework with immediate effect (Developer Operator 6 and 7). Additionally, a price for carbon emission allowances which is

¹⁹¹⁷ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

¹⁹¹⁸ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

reflective of the true cost of emissions abatement automatically gives a signal to low carbon generation and differentially makes electricity derived from high carbon fuels (e.g. coal) more expensive and thus less likely to be dispatched (Developer Operator 7).

The EU-ETS is an environmental measure and falls within the competence of the Commission. As the pricing and details of the EU-ETS are harmonised across the EU, the diagonal conflict with free movement is removed. Should also the member state focussed allocation of emissions allowances be removed, and all allowances be auctioned, the diagonal conflict with the provisions of state aid (Article 107 TFEU) would also be removed.

Although the Developer Operator respondents make the claim for market-based solutions to be brought to the fore, the Climate Change Scientist in following the theme put forward a three-point plan (i) as a priority, pursue energy efficiency measures as they reduce demand for energy, (ii) focussing on the carbon markets and enforcing a price no less than 20 \$ per tonne, and (iii) keep the pressure on the political class.

The Regulatory respondent was asked about the increased use of market-based mechanisms and in response stated that the regulator always '*seeks to introduce competition where possible.*' The Regulatory respondent, however, would not be drawn further on this theme.

The responses show that a sound body of opinion amongst the respondents seek a greater emphasis on market based on solution and that these solutions should be implemented at an EU level. The respondents seek a greater use of market-based solutions as they provide efficiency in the costing of any investment made.

What was not brought out by the respondents is that the C&C based instruments, where developers are given a guaranteed income via a feed in tariff, allows smaller developers to enter the market as they are able to access the debt market on the back of the feed in tariff. This means that the number of renewable schemes will increase as these smaller developers can implement niche projects which larger utilities would find uneconomic. Also, these smaller projects developed outside the corporate structure of the large utility foster a greater ability for community engagement which may well have benefits in terms of energy use reduction beyond the pure diffusion of technology.

Therefore, whilst traded market solutions will bring costs efficiencies to bear they tend to concentrate the ability to develop facilities into the hands of large utility companies who can finance their activities at a corporate level.¹⁹¹⁹

Such a solution is therefore an issue for social policy, where a choice should be made between a regulatory structure which drives for the lowest cost solution to carbon abatement, knowing this will concentrate development in the hands of a few companies, or a regulatory structure which desires a level of community involvement.¹⁹²⁰

Theme 4.2 – Change Topology of Transmission Network

As an industry, the respondents recognised that the structure and location of the transmission networks was built for the coal and nuclear generation of the last century. Therefore, respondents stated that the industry will need to change the topology of the transmission network in order to allow the free flow of renewable electricity which is located very differently from coal and nuclear (Developer Operator 4 and 6) and thus make the removal of the diagonal conflict with free movement a reality.

Funding of the construction programme and the need to build acceptance of power lines within the general public are issues of importance for the industry (however, the detail of such is outside the scope of this research). It was acknowledged that network assets are a focus of the latest amendments to the state aid block exemption regulations (GBER) set out in Annex 4 (Internal Legal Counsel 2, Developer Operator 6) and therefore respondents stated that the design of the funding arrangements is critical to ensure that they do not conflict with the anti-state aid provisions in Article 107 TFEU.

In terms of financing the development of transmission assets, some respondents proposed the socialisation¹⁹²¹ of grid construction costs (Internal Legal Counsel 1, Developer Operator 1, 2, 5 and 7). Although the call for socialisation of these costs was stated clearly by some, this request is not universally accepted

¹⁹¹⁹ Colin Nolden, 'Governing community energy—Feed-in tariffs and the development of community wind energy schemes in the United Kingdom and Germany' (2013) 63 *Energy Policy*, 543; See Also David Toke and Aikaterini Fragaki, 'Do liberalised electricity markets help or hinder CHP and district heating? The case of the UK' (2008) 36(4) *Energy Policy*, 1448

¹⁹²⁰ Tim O'Riordan, 'Cultures of Community Energy: A Policy Report' [2016] The British Academy

¹⁹²¹ The term 'socialisation' within the electricity industry describes a process whereby costs of the function or activity is spread across all consumers and as such is seen an activity of general economic interest - Michael Rivier, Ignacio Pérez-Arriaga and Luis Almos 'Electricity Transmission' in Ignacio Pérez-Arriaga (ed) *Regulation of the Power Sector* (Springer, 2014), 294

across the industry, with others calling for increased cost reflectivity¹⁹²² (Developer Operator 3 and 4).

The Regulatory respondent acknowledged the need to change the topology of the transmission network and that such changes may bring about the need to recast the way transmission systems are regulated. The example of such a change being the split of UK's National Grid Electricity Transmission's (NGET) transmission licence such the system operation¹⁹²³ obligations will be undertaken by a new entity National Grid Electricity System Operator (NGESO) and the asset management¹⁹²⁴ obligations remaining with NGET.¹⁹²⁵

The Regulatory respondent went on to speak specifically about network tariffs by stating,

electricity network charging is an area of ongoing reform. Current work is examining how residual charges on the electricity network can be reformed. Network connection and access are also being reviewed in the light of potential system developments such as greater uptake of electric vehicles and heat pumps. The other issue is the development of grid level battery storage,¹⁹²⁶ as this will need a fully developed set of regulations.

It is believed that regulators will need to rely heavily on industry experts to develop these regulations because of the novel assets being deployed and the fast pace of technology development.

The Regulatory respondent acknowledged that transmission networks will have to evolve most noticeably because of the introduction of a 15% target for interconnection levels¹⁹²⁷ between EU countries. The increase in interconnection capacity should have a direct correlation on the ability of transmission operators to increase cross-border flows and as such allow the development of renewable facilities in the most efficient locations in terms of wind and solar resources. The

¹⁹²² Sean Gammons, Richard Druce and Peter Davies, 'Assessing the Cost Reflectivity of Alternative TNUoS Methodologies' [2014] NERA Report available at <http://www.nera.com/content/dam/nera/publications/2014/CostReflectivityReport.pdf>

¹⁹²³ These obligations include - managing system dispatch of generation assets, system balancing, network switching and operations and facilitating competitive markets - <https://www.nationalgrid.com/uk/about-grid/our-role-in-the-future-electricity-system-operator> accessed 26 August 2018

¹⁹²⁴ These obligations include – maintenance, repair and construction of new assets - Ibid

¹⁹²⁵ PM0102: National Grid Legal Separation - consequential changes to STCPs to reference NGESO – April 2018 available at https://www.nationalgrid.com/sites/default/files/documents/PM0102-%20STCP%20Mod%20Prop%20NGESO%20170418_0.pdf accessed 26 August 2018

¹⁹²⁶ An example being EDF Energy's 49 megawatt battery at West Burton, Nottinghamshire. This is part of a €8bn storage investment programme by EDF across the EU – 27 March 2018 <https://uk.reuters.com/article/uk-edf-renewables-storage/edf-to-invest-8-billion-euros-in-power-storage-business-idUKKBN1H31CE> accessed 10 July 2018

¹⁹²⁷ Interconnection Levels of 15% by 2030 are set out in the EU's 'Communication on strengthening Europe's energy networks' – See Section 2.9.2 – available at https://ec.europa.eu/energy/sites/ener/files/documents/communication_on_infrastructure_17.pdf accessed 10 July 2018

Regulatory respondent suggested that regulatory competence over transmission network developments (Article 171(1) TFEU) is focussed on member states rather than it being a shared competence as currently shaped. _

Lastly, the Regulatory respondent confirmed the evolution of price and tariff structure regulation such that transmission companies are incentivised to invest in assets. This evolutionary regulatory approach is consistent with the need to develop 15% interconnection capacity between member states by 2030 (Section 2.10.1). The Regulatory respondent therefore proposed to change from the traditional approach of return on capital employed to an innovation, incentives and outputs approach. This approach to funding being based on total expenditure (capital and revenue), placing a greater emphasis on incentives which drive network innovation needed to deliver a sustainable energy network.

The respondents made it clear that with the potential for electric vehicles and electrification of heat (most premises are heated by gas – which is a carbon emissions source in every home, factory and office in the EU) the level of electricity demand is set to increase rapidly (Internal Legal Counsel 1, 2 Developer Operator 1,2,4,5,7). This overall demand growth will create the need to further expand the use of renewable electricity generation. Thus, whilst the focus of the last several years has been on the development of renewable generation technology the focus of the coming years is likely to be on network developments.¹⁹²⁸

Theme 4.3 – Future of Regulatory Oversight

In considering the comments made by the respondents in this section an understanding of the competence of the EU's institutions should be obtained via a review of Section 2.4.

Certain respondents raised concerns as to the development of regulatory oversight and which bodies would provide it going forward (Internal Legal Counsel 2, External Legal Counsel 3, and Developer Operator 7).

A concern was raised as to the role of ACER in that it seems to be developing an increasingly political role and as such its decisions and recommendation could be subject to judicial challenge (Developer Operator 7 and External Legal Counsel 3). This development seems to be transferring certain of the EU's competence to ACER. Therefore, with an increased pan-EU regulatory focus, ACER is said to bring

¹⁹²⁸ Matthias Huber, Desislava Dimkova and Thomas Hamacher, 'Integration of wind and solar power in Europe: Assessment of flexibility requirements' (2014) 69 Energy, 236; Paul Denholm and Maureen Hand, 'Grid flexibility and storage required to achieve very high penetration of variable renewable electricity' (2011) 39(3) Energy Policy, 1817

with it a perception of regulatory volatility, as there is little regulatory history with which to forecast decisions or how its decisions will be interpreted by the CJEU. It was felt that the regulation of the electricity market, at the EU level, will become the role of ACER and thus the rules may become more harmonised, this assisting with increasing cross-border trades. This is felt to reduce any diagonal conflict issues with free movement and state aid issues, as the most economically efficient renewable facilities will be developed (Developer Operator 4, 5, 7 Internal Legal Counsel 2).

It was reported, however, that the Commission will hold onto the regulatory oversight of rules around the EU-ETS and therefore its competence (Developer Operator 4, 7).

With two different regulatory bodies regulating important, but different parts of the renewables regulatory framework, the potential for conflict and inconsistent rules and proposals is increased (Internal Legal Counsel 2 and External Legal Counsel 3) and therefore causing a horizontal conflict to develop between different parts of the regulatory framework. Several respondents stating that there is no point replacing a diagonal conflict surrounding free movement and state aid with a horizontal conflict within the regulatory framework – thus the limits of the competence of each organisation needs to be defined well and each given a duty to co-ordinate and co-operate (Internal Legal Counsel 1, External Legal Counsel 3, Developer Operator 4, 5, 6, 7).

A potential future for carbon emitting generating plant and the companies that own and operate them could be that of class action litigation. Some respondents (Internal Legal Counsel 1, External Legal Counsel 3, Developer Operators 4, 6, 7) highlighted that carbon emitting coal generators in Europe and the USA were seen as legitimate targets for litigation by certain individuals and countries whose existence is threatened by rising sea levels.¹⁹²⁹ The respondents acknowledged that this kind of litigation could be dismissed as fanciful. However, then went on to list the litigation surrounding the tobacco industry and the class action litigation for the effects of cancer decades after health warnings were compulsory on packets of cigarettes (Internal Legal Counsel 1, External Legal Counsel 3, Developer Operators 4, 6, 7).¹⁹³⁰

¹⁹²⁹ Case C/09/456689 - *Urgenda Foundation v Government of the Netherlands* (June 2015), Available at <https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2015:7196&keyword=urgenda> (accessed 3 February 2017) – the Dutch Court took as a persuasive authority the Intergovernmental Panel on Climate Change (IPCC) reports on climate change due the multi-national consensus on the subject

¹⁹³⁰ In 1998 the largest US tobacco companies and 46 US states signed the Tobacco Master Settlement Agreement, whereby manufacturers agreed to pay an estimated \$206 billion over the first 25 years of the

The respondents were concerned that companies and their CEOs could become the focus of litigation despite compliance with the EU's regulatory framework and international commitments via the UNFCCC¹⁹³¹ and the COP 21 Paris Climate Change Agreement.¹⁹³²

The case of Prunéřov II power plant was given as an example by Internal Legal Counsel 1, whereby Micronesia asserted the facility did not meet best available technology (BAT) as required by the Industrial Emissions Directive.¹⁹³³ The case was not pursued; however, it shows that cross border environmental impact may become a focus of litigation in the future.

4.6 Conclusions & Key Lessons

In relation to the core research questions of the conflict between renewable regulation and the EU's free trade principles the empirical research shows that the Internal and External Legal Counsel were actively engaged in litigating cases related to free movement showing the conflict outlined in the doctrinal phase of the research has practical importance (Theme 1.2). Developer Operator respondents largely saw the issue as one of regulatory risk and cost to serve.

Additionally, Theme 2.3 illustrated the concern market operators have with the potential for the regulatory framework to conflict with the EU's state aid provisions. Respondents drawing specifically on cases set out in the doctrinal analysis (*Austrian Green Levy*¹⁹³⁴ and *German Green Levy*)¹⁹³⁵ to illustrate how poorly designed support schemes could lead to state aid issues.

In seeking to manage the returns from generating assets and track regulatory change or regulatory risk, the responses from the Developer Operators can be seen to reflect the composition of the sector, with different plant portfolios and different business drivers owned by organisations with financial return expectations.

agreement: See State of California Department of Justice Office of the Attorney General, <https://oag.ca.gov/tobacco/msa> (accessed 5 September 2016)

¹⁹³¹ See http://unfccc.int/parties_and_observers/items/2704.php.

¹⁹³² UNFCCC (2015), 'Adoption of the Paris Agreement: Proposal by the President', Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (accessed 13 July 2016).

¹⁹³³ *Federated States of Micronesia v Czech Republic*; See Also Andrew Burke, 'Federated States of Micronesia v Czech Republic: greenhouse emissions as transboundary pollution' (2011) 14(1-2). *Asia Pacific Journal of Environmental Law*, 203; Paulo A Lopes, 'FSM vs. Czech': A New "Standing" for Climate Change? (2010) 10(2) *Sustainable Development Law & Policy* 24

¹⁹³⁴ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁹³⁵ Commission Decision 2015/1585, Aid Scheme SA 33995 –“ implemented by Germany for the support of renewable electricity and of energy-intensive users”, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.250.01.0122.01.ENG accessed 30 March 2018

The regulatory issues are an engagement and management exercise with the legislator and regulator seen to be playing the role of contract counterparty, despite the Regulatory respondent stating there was no negotiation (Themes 3.2 & 3.3).

The Developer Operators were extremely concerned at the potential loss of priority dispatch¹⁹³⁶ and embedded benefits (Theme 1.2 & 1.3), which the doctrinal phase illustrated to be contained in both the Electricity Markets Directive and the Renewable Energy Directive (Sections 2.10.6 & 2.10.7) and thus key to the development of renewable electricity capacity.

The Developer Operator, Internal and External Legal Counsel and Insurance respondents all confirmed by one means or another that they track, quantify and seek to mitigate regulatory risk (Theme 3.1 & 3.2).

Most respondents confirmed that they see higher levels of regulatory risk being present in the industry going forward, compared to historically or currently, and this is an issue which will require an increased rate of return from a project before an investment can be made. This in effect makes new projects more 'expensive' and has the potential to reduce the number of sites where renewable facilities can be developed, as only the most profitable will ever be commissioned. The Regulatory respondent stated that as a function they seek to maintain rates of return across assets on the network, as when higher costs assets start operating, the majority of plant simply increase their output price knowing that the market is likely to pay, a simple supply and demand issue.

The issue which the Developer Operators and the Investment Fund Manager respondent feared most was a retrospective reduction in the level of renewables support (Theme 1.1), as this could make their assets economically stranded, thus illustrating the practical importance of cases *Charanne*¹⁹³⁷ (Spain) and *Scat Puntì Vendita*¹⁹³⁸ (Italy) (Section 3.5.8).

¹⁹³⁶ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules' - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

¹⁹³⁷ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf accessed 20 January 2017

¹⁹³⁸ Decision 10/2015, *Scat Puntì Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

Lastly, in looking to the future of regulations, respondents were generally in favour of market-based solutions rather than command and control¹⁹³⁹ based regulatory targets managing carbon abatement. They also saw the potential for a conflict or inconsistency to appear between the regulatory determinations of the Commission (with oversight of the EU-ETS) and ACER (with oversight of the inter member state trades in electricity) as another source of regulatory volatility.

¹⁹³⁹ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

Chapter 5 – Conclusions & Recommendations

5.1 Introduction

This chapter sets out the conclusions and recommendations arising out of the research. This is done in the context of the two phases of the study, (i) doctrinal and (ii) empirical. The recommendations made in this thesis are made based on the views of the industry respondents and the practical findings these views represent. The recommendations are thus made within the context of the analysis of the conflicts analysed.

Following introductory sections relating to a thesis overview and key contributions the chapter is divided into two parts. The first part details the conclusions of the study and the second part is composed of recommendation for regulatory change and refocus. There are also sections outlining limitations of the research and recommendations related to further research to strengthen the understanding of market participants and consumers.

5.2 Overview of Research Findings

This research focused on the diagonal conflicts between the renewable electricity regulatory framework and wider EU free trade principles (e.g. free movement and state aid). A conflict can be regarded as a diagonal conflict when different elements of the regulatory framework are variously in conflict not with the Treaty Article from which it is derived (which would be vertical conflict), but other Treaty Articles.

Chapter 2 initially considered the nature of legal conflicts and how they occur and are resolved. The Chapter also set out how the increased specialism of international law¹⁹⁴⁰ has caused fragmentation and conflicts between differing legal instruments.¹⁹⁴¹ Chapter 2, in setting out the details of the various Treaty Articles and Directives forming the renewable electricity regulatory framework showed the framework to be complex, with several interlocking regulatory instruments. The Chapter also showed that having nationally focused command and control style Directives increased the areas of conflict with wider EU free trade principles. The analysis showed that taken as a whole the Treaty Articles did resolve elements of

¹⁹⁴⁰ International Law being considered as a body of law or a jurisdiction brought about by the collaboration of two or more sovereign states – Hans Kelsen *Principles of International Law* (Rinehart, 2003), 201

¹⁹⁴¹ H.E. Judge Gilbert Guillaume, President of the International Court of Justice, Speech to the General Assembly of the United Nations (30 Oct. 2001), <http://www.ici-cij.org/files/press-releases/5/2995.pdf> accessed 10 March 2019; See Also Mario Prost and Paul Clark, 'Unity, Diversity and the Fragmentation of International Law: How Much Does the Multiplication of International Organizations Really Matter?' (2006) 5(2) Chinese Journal of International Law, 34

the electricity ‘trilemma’ (reliability, sustainability and affordability),¹⁹⁴² with reliability addressed by both the network provisions (Article 170 TFEU – making the network more robust to technical issues) and the environmental and energy articles (Article 192 to 194 TFEU – increasing sustainability of the installed generation capacity and reducing energy demand). A similar finding can be derived from the analysis of the Directives forming the regulatory framework.

The case law analysis contained in Chapter 3 showed that member state implementation of the Directives set out in Chapter 2, variously conflicted with free movement, state aid and the polluter pays principle. The analysis also revealed that elements of the regulatory framework were in internal conflict (e.g. the Energy Efficiency Directive and Emissions Trading Directive).

The empirical research (Chapter 4) presented the views of market operators (using thematic analysis) and illustrated the commercial importance of the diagonal conflicts set out during the doctrinal phase. The empirical research showed that Developer Operators were willing to both lobby regulators and ultimately litigate to manage the interpretation and development of the regulatory framework. The empirical phase also illustrated the desire for a simplified regulatory structure amongst market operators.

The conclusions and recommendations below outline the potential direction of the regulatory structure and indicate the direction of future research.

5.3 Key Contribution

The five ways this research contributes to existing knowledge are outlined below.

Firstly, the research uses case law analysis to consider the interaction of EU renewable electricity law¹⁹⁴³ and free movement (Article 34 TFEU)¹⁹⁴⁴ and state aid (Articles 107 TFEU).¹⁹⁴⁵ There is considerable academic literature surrounding both vertical and horizontal conflict,¹⁹⁴⁶ however, there is little discussion of diagonal

¹⁹⁴² David Newbury ‘Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma’ [2016] Cambridge University, Energy Policy Research Group Working Paper: See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

¹⁹⁴³ Renewable Energy Directive, Emissions Trading Directive, Effort Sharing Decision, Industrial Emissions Directive, Energy Efficiency Directive, Electricity Market Directive, Energy Taxation Directive and others

¹⁹⁴⁴ Hans Vedder, Anita Rønne, Martha M Roggenkamp and Íñigo del Guayo, ‘EU Energy Law’ in Martha Roggenkamp, Catherine Redgwell, Anita Rønne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

¹⁹⁴⁵ Kamiel Mortelmans, ‘Towards Convergence in the Application of the Rules on Free Movement and on Competition?’ (2001) 38,3 Common Market Law Review, 613, 613.

¹⁹⁴⁶ Sybe de Vries ‘The Protection of Fundamental Rights Within Europe’s Internal Market After Lisbon: An endeavour for more harmony’ in Sybe de Vries, Ulf Bernitz and Stephen Weatherill (eds) *The Protection of Fundamental Rights in the EU After Lisbon* (Hart, 2013); Philippe Sands and Paolo Galizzi *Documents in European Community Environmental Law* (Cambridge University Press, 2006); Eva Heidbreder ‘Strategies in multilevel policy implementation: moving beyond the limited focus on compliance’ (2017) 24(9) Journal of European Public Policy, 1367;

conflicts in the context of renewable electricity and market operators perception of regulatory risk.¹⁹⁴⁷ This is therefore a gap in academic literature which this research seeks to fill.

In so doing this research builds on academic literature¹⁹⁴⁸ and demonstrates the consistent use of *lex specialis* by the CJEU in resolving the diagonal conflicts between renewable electricity law and EU commercial legal principles. The research looks at the diagonal conflicts highlighted by *Ålands Vindkraft*¹⁹⁴⁹ litigation (as well as other cases - Section 3.5) and the rich academic commentary,¹⁹⁵⁰ to better understand the diagonal conflict between the renewable electricity regulatory framework and free movement.¹⁹⁵¹

Secondly, the research points out that the CJEU's use of *lex specialis* in favour of the renewable electricity law¹⁹⁵² denies consistent application of other provisions of the Treaty, such as the network provisions contained in Articles 170 to 172 TFEU. The research thus suggests other means of supporting renewable electricity capacity that would temper the continued use of *lex specialis*.¹⁹⁵³

Thirdly the research builds on the considerable general academic literature surrounding legal conflict resolution,¹⁹⁵⁴ by looking at an analysis framework which

¹⁹⁴⁷ Rike Krämer, 'The Notion of Diagonal Conflicts as a Key Concept of European Conflicts Law' in Christian Joerges (ed) *After Globalisation, New Patterns of Conflict and their Sociological and Legal Reconstructions* (ARENA Report No 4/11, 2011), 145, 158

¹⁹⁴⁸ Angus Johnson and Guy Block, *EU Energy Law* (Oxford University Press, 2012); Michael Faure and Marjan Peeters (eds) *Climate Change Liability* (Elgar, 2011); Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe* (Oxford University Press, 2016); Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

¹⁹⁴⁹ Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

¹⁹⁵⁰ Marek Szydło, 'How to reconcile national support for renewable energy with internal market obligations? The task for the EU legislature after *Ålands Vindkraft* and *Essent*' (2015) 52(2) *Common Market Law Review*, 489; Anouk van Der Wanssem, 'Judgment of the European Court of Justice, 1 July 2014: Case C-573/12, *Ålands Vindkraft AB v. Energimyndigheten*' (2015) 42(4) *Legal Issues of Economic Integration*, 401; Armin Steinbach and Robert Brückmann, 'Renewable Energy and the Free Movement of Goods' (2015) 27(1) *Journal of Environmental Law*, 1; Eirini Tsifopoulou, 'Renewable-Energy Support Schemes in the Case Law of the Court of Justice of the EU: Tensions Between Trade and Climate Objectives' (2016) 6(3-4) *Climate Law*, 264; Dorte Fouquet and Angela Guarata, 'Judgment of 1 st July 2014 in *Ålands Vindkraft AB v Energimyndigheten* Comments on Case C-573/12' (2014) 1 *Renewable Energy Law and Policy Review*, 52; Étienne Durand and Malcolm Keay, 'National support for renewable electricity and the single market in Europe: the *Ålands Vindkraft* case' [2014] *Oxford Institute for Energy Studies*; Geert van Calster, 'Climate change and renewable energy as a super trump for EU trade law' (2014) 1 *Renewable Energy Law and Policy Review*; Dorte Fouquet and J Nysten, 'Guarantees of Origin and Green Electricity Certificates in Flanders and in Sweden national design weaknesses or violation of European rules?' (2013) 3(3) *European Energy Journal*, 72; Alex McLean, 'The ECJ / *Ålands* case – Implications for National Renewables Support Systems' [2014] *Energy & Resources*; A Sánchez Graells, 'CJEU protects discriminatory green energy schemes and keeps inconsistency in EU free movement of goods law (C-573/12)' (2014) <http://howtocrackanut.blogspot.no/2014/07/cjeu-protects-discriminatory-green.html> (accessed 10 May 2016); C Ryckman, 'EU Court Allows Discriminatory Green Energy Support Schemes', *National Law Review* (2014), www.natlawreview.com/article/eu-court-allows-discriminatory-green-energy-support-schemes (accessed 1 April 2016); C Banet, 'The EU Court Of Justice rules in favour of Sweden in the *Åland Vindkraft* Case' July 2014, www.ecohz.com/facts-news/news/aaland-case (accessed 1 September 2016)

¹⁹⁵¹ Rike Krämer, 'The Notion of Diagonal Conflicts as a Key Concept of European Conflicts Law' in Christian Joerges (ed) *After Globalisation, New Patterns of Conflict and their Sociological and Legal Reconstructions* (ARENA Report No 4/11, 2011), 145, 158

¹⁹⁵² Renewable Energy Directive, Emissions Trading Directive, Effort Sharing Decision, Industrial Emissions Directive, Energy Efficiency Directive, Electricity Market Directive, Energy Taxation Directive and others

¹⁹⁵³ Aviel Verbruggen and Volkmar Lauber, 'Basic Concepts for Designing Renewable Electricity Support Aiming at a Full-scale Transition by 2050' (2009) 37 *Energy Policy* 5732, 5734

¹⁹⁵⁴ Sybe de Vries 'The Protection of Fundamental Rights Within Europe's Internal Market After Lisbon: An endeavour for more harmony' in Sybe de Vries, Ulf Bernitz and Stephen Weatherill (eds) *The Protection of*

divides the Directives forming the renewables regulatory framework according to the body which holds the competence¹⁹⁵⁵ for that area of EU law (e.g. Commission, member state or a shared competence) and if the Directive is based on a command and control (C&C)¹⁹⁵⁶ or market-based structure. This original analysis framework has allowed consideration to be given to which type of Directive C&C or market based combined with the competence holding structure induces a higher number of conflicts.

The research further showed that the Luxembourg Court had allowed inconsistency to develop between its findings to the detriment of regulatory stability. The Court had previously confirmed the principle non-retroactivity of legal acts (*Moravia Gas Storage*¹⁹⁵⁷ and *VEMW*¹⁹⁵⁸); however, retrospective reductions were allowed in national renewable support schemes¹⁹⁵⁹ in Spain and Italy (*Charanne*¹⁹⁶⁰ and *Scat Punt*¹⁹⁶¹). These cases highlight issues surrounding the interaction of EU law, its primacy,¹⁹⁶² (i) the right to regulate and non-EU Treaty commitments of member states – in this case the Energy Charter Treaty,¹⁹⁶³ (ii) consumer protection

Fundamental Rights in the EU After Lisbon (Hart, 2013); Philippe Sands and Paolo Galizzi *Documents in European Community Environmental Law* (Cambridge University Press, 2006); Eva Heidbreder 'Strategies in multilevel policy implementation: moving beyond the limited focus on compliance' (2017) 24(9) *Journal of European Public Policy*, 1367

¹⁹⁵⁵ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

¹⁹⁵⁶ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

¹⁹⁵⁷ Case C-596/13 *Commission v Moravia Gas Storage AS. (previously Globula AS.)* ECLI:EU:C:2015:203, para. 36; *Ibid*, para 46

¹⁹⁵⁸ Case C-17/03 *Vereniging voor Energie, Milieu en Water and Others (VEMW) v Directeur van de Dienst uitvoering en toezicht energie*, ECLI:EU:C:2005:362

¹⁹⁵⁹ means 'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments' – Definition from Article 2 Renewable Energy Directive (2009/28/EC)

¹⁹⁶⁰ Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L. v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf

¹⁹⁶¹ Decision 10/2015, *Scat Punt Vendita Spa v Agenzia delle entrate* - Direzione provinciale di Reggio Emilia, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

¹⁹⁶² Case C-6/64, *Flaminio Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66; See also Case C-26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen*, ECLI:EU:C:1963:1; Case C-266/16 *Western Sahara Campaign UK v Commissioners for Her Majesty's Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs* ECLI:EU:C:2018:118; Case C-284/16 *Slowakische Republik v Achmea BV* ECLI:EU:C:2018:158

¹⁹⁶³ The Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-Treaty-1994/energy-charter-Treaty>; For an introduction to the Energy Charter Treaty see Graham Coop and Bernhard Maier, 'External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 66

(*RWE Vertrieb*¹⁹⁶⁴ and *Schulz-Egbringhoff*¹⁹⁶⁵ - the ability of utility companies to change supply conditions unilaterally were restricted), (iii) concessions for the operation of network infrastructure (*ASM Brescia*)¹⁹⁶⁶ and (iv) the support for renewable energy sources (*Plantanol*)¹⁹⁶⁷ – the Court restricting changes to support for bio-diesel).

Fourthly, the empirical research contributes by setting out the importance to market participants of the conflicts described. The empirical research was undertaken to obtain the views of market participants on the justification and robustness (long-term legal sustainability) of the granting to renewable electricity a ‘special status’¹⁹⁶⁸ by way of a derogation from the application of free movement (as an overriding objective);¹⁹⁶⁹ as well as providing a derogation from undistorted competition and other anti-state aid provisions contained in Article 107(1) TFEU.¹⁹⁷⁰ The empirical research also considered the derogations put in place from the ‘polluter pays’ principle.

The empirical research found, in contrast to the statements made by the developer operator trade body (Section 3.5.2) that such market participants consider the *lex specialis* approach to diagonal conflict resolution between EU free trade principles and the renewable regulatory framework as a regulatory risk which increases the rates of return necessary for projects to achieve ‘financial close’¹⁹⁷¹ (See Section 4.6, Theme 3.6).¹⁹⁷² The empirical research confirming that regulatory stability is needed to ensure the necessary investments are made in renewable electricity facilities.¹⁹⁷³ A further contribution made by the empirical research is that

¹⁹⁶⁴ Case C-92/11 *RWE Vertrieb AG v Verbraucherzentrale Nordrhein-Westfalen eV*, ECLI:EU:C:2013:180

¹⁹⁶⁵ Joined Cases C-359/11 and C-400/11 *Alexandra Schulz v Technische Werke Schussental GmbH und Co. KG and Josef Egbringhoff v Stadtwerke Ahaus GmbH*, ECLI:EU:C:2014:2317

¹⁹⁶⁶ Case C-347/06 *ASM Brescia SpA v Comune di Rodengo Saiano*, ECLI:EU:C:2008:416

¹⁹⁶⁷ Case C-201/08 *Plantanol GmbH & Co. KG v Hauptzollamt Darmstadt*, ECLI:EU:C:2009:539

¹⁹⁶⁸ Geert van Calster, ‘Climate Change and Renewable Energy as a Super Trump for EU Trade Law

However all Essent clear’ (2014) 1 2014 Renewable Energy Law & Policy Review, 60

¹⁹⁶⁹ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁹⁷⁰ Catherine Barnard, *The Substantive Law of the EU: The Four Freedoms*, (Oxford University Press 2007)

¹⁹⁷¹ Financial close is a point in time when a project has reach a position where its forecast returns are such that the equity providers are satisfied with their returns and the financing agreements have been signed and any pre-conditions contained in these agreements are satisfied. It enables funds (equity, loans, grants etc) to be made available to the project.- See Scott Hoffman *The Law and Business of International Project Finance: A Resource for Governments, Sponsors, Lawyers, and Project Participants* (Cambridge University Press, 2008); See Also Sue Wright *The Handbook of International Loan Documentation* (Palgrave MacMillan, 2014)

¹⁹⁷² Ingmar Ritzenhofen and Stefan Spinler, ‘Optimal design of feed-in-tariffs to stimulate renewable energy investments under regulatory uncertainty — A real options analysis’ (2016) 53 *Energy Economics* 76

¹⁹⁷³ Joel Smith and Johannes Urpelainen, ‘Removing fuel subsidies: How can international organizations support national policy reforms?’ (2017) 17(3) *International Environmental Agreements: Politics, Law and Economics*, 327; Margaret Young, ‘Energy Transitions and Trade Law: Lessons from the Reform of Fisheries Subsidies’ (2017) *International Environmental Agreements: Politics, Law and Economics*; University of Melbourne Legal Studies Research Paper No. 746. Available at <https://ssrn.com/abstract=2930693>; Ambrus Bárány and Dalia Grigonyté, ‘Measuring Fossil Fuel Subsidies’, European Commission, available at http://ec.europa.eu/economy_finance/publications/economic_briefs/2015/pdf/eb40_en.pdf, accessed 15

developer operators desire for a simpler and more focused regulatory framework, with increased harmonisation at EU level (less discretion given to member states to determine the details of the renewable energy regulatory framework).

The empirical research also found Developer Operator's negative perception on the value¹⁹⁷⁴ of their investments in renewable generating facilities because of intervention by national and EU regulatory functions in what is perceived to be a liberalised electricity market. It being found that the Developer Operators have been prepared to litigate in relation to the imposition of price caps (*Federutility*¹⁹⁷⁵ and *Enel*)¹⁹⁷⁶ on the grounds of protection under, international investment law (*Commission v Slovakia*)¹⁹⁷⁷ and the right to property (*Essent*).¹⁹⁷⁸

Lastly the recommendations for the reshaping of the regulatory framework set out in Chapter 5 outline a requirement to increase transmission network interconnectedness, simplifying and focusing the regulatory framework on emissions trading and energy efficiency is not known to be suggested in academic literature to date.

5.4 Conclusions

Conclusion 1 – Renewable Energy Regulatory Framework in Diagonal Conflicts with EU Free Trade Principles

The theoretical framework and conflict analysis undertaken in Chapter 2 and case law Chapter 3 shows that the renewables regulatory framework is in diagonal conflict with EU free trade principles. Finding a conflict within a complex legal construct such as the body of EU law is not unusual and therefore at its simplest this conclusion could have almost been predicted,¹⁹⁷⁹ however, it is the number of conflicts and that the conflicts are dependent on the nature of the legal instrument in question that was not predictable.

Additionally, the CJEU is found to consistently apply a *lex specialis* approach to resolving the resolving the legal conflict between the renewable's regulatory

October 2016; David Victor, 'The Politics of Fossil-Fuel Subsidies' (2009) Available at <https://ssrn.com/abstract=1520984> accessed 20 October 2016; See Also Euroelectric, *Ensuring investments in a Liberalised Electricity Sector*, (Euroelectric, 2004), 53; International Energy Agency, *Power Generation Investment in Electricity Markets* (International Energy Agency, 2003), 12

¹⁹⁷⁴ Joanna Lewis, 'The rise of renewable protectionism: Emerging trade conflicts and implications for low carbon development' (2014) 14(4) *Global Environmental Politics*, 10

¹⁹⁷⁵ Case C-265/08 *Federutility and others v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2010:205

¹⁹⁷⁶ Case C-242/10 *Enel Produzione SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2011:861

¹⁹⁷⁷ Case C-264/09 *Commission v Slovak Republic*, ECLI:EU:C:2011:580

¹⁹⁷⁸ Joined Cases C-105/12 to C-107/12 *Staat der Nederlanden v Essent NV, Essent Nederland BV, Eneco Holding NV and Delta NV*, ECLI:EU:C:2013:677

¹⁹⁷⁹ Gunnar Beck, 'The Macro Level: The Structural Impact of General International Law on EU Law The Court of Justice of the EU and the Vienna Convention on the Law of Treaties' (2016) 35(1) *Yearbook of European Law*, 484

framework and the EU's free trade principles. As such the CJEU could be following a Dworkin constructive approach to interpretation looking at the political or even moral concerns, related to the abatement of climate change.¹⁹⁸⁰

Additionally, during the empirical research, the market operators set out their concern that the diagonal conflict between the renewable regulatory framework and the EU's free trade principles, will lead to regulatory change that is unforecastable (regulatory volatility).

The diagonal conflict is in three parts with a fourth vertical conflict brought out via the empirical research and listed below. The diagonal conflicts are:

- Free Movement of Goods (Articles 28 to 35 TFEU): the Renewable Energy Directive¹⁹⁸¹ (Directive Article 3.3) allows the setting up of nationally focussed renewable electricity support systems. Once the national renewables support schemes are set up member states have restricted the export of renewable electricity. These restrictions directly conflict with the free movement of goods provisions set out in TFEU. Member states also exclude renewable generating facilities from other member states from gaining access to their support schemes. The findings of the empirical research showed that the Developer Operators are concerned about this diagonal conflict and as such are prepared to undertake judicial action to clarify individual situations.
- State aid rules prohibiting market segmentation (Article 107(1) TFEU): Furthermore renewable electricity enjoys the practice of priority dispatch¹⁹⁸² whereby it receives a derogation from compliance with the normal dispatch processes and the competitive mechanisms contained therein.¹⁹⁸³ As was outlined above, the Developer Operators see the loss of priority dispatch¹⁹⁸⁴

¹⁹⁸⁰ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

¹⁹⁸¹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

¹⁹⁸² 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules' - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

¹⁹⁸³ Ibid, Article 16(2)(b)

¹⁹⁸⁴ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules' - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

for renewable assets as a revenue risk, as this will require renewables to compete for dispatch in the same way as conventional generation. The Developer Operators arguing the removal of priority dispatch may lead to carbon emitting generation being dispatched instead of renewables, which is contrary to the overriding objective of emission abatement,¹⁹⁸⁵ however, the removal of priority dispatch looks inevitable.

- State aid rules prohibiting anti-competitive pricing (Article 107 TFEU):
Renewable electricity facilities receive from the member states either a tradeable green certificate¹⁹⁸⁶ or a feed-in tariff,¹⁹⁸⁷ which fixes the selling price for renewable electricity above that available in the wholesale market. Due to the collection by emanations of the state¹⁹⁸⁸ of monies from electricity consumers to pay the feed-in tariff to renewable electricity producers, and sometimes the granting of tax incentives, state aid has been granted. The consideration of this issue by the CJEU has shown that the design of the renewables support scheme is key to it not being declared state aid (*PreussenElektra*,¹⁹⁸⁹ *Vent De Colère*,¹⁹⁹⁰ *Austrian Green Levy*¹⁹⁹¹ and *German Green Levy*).¹⁹⁹²

In addition to the three areas of diagonal conflict the renewables regulatory framework is also in vertical conflict with the 'polluter pays' principle as set out.

¹⁹⁸⁵ 'overriding objective of environmental protection' from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or 'overriding requirement of environmental protection' from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

¹⁹⁸⁶ Green certificates are instruments certifying the production of electricity from renewable sources. Electricity suppliers are expected to generate a given amount of electricity from renewable energy sources, an act which is demonstrated by the possession of a green certificate which can be traded and thus revenues recovered - Gestore Mercati Energetici, 'About Green certificates' <www.mercatoelettrico.org/en/mercati/cv/CosaSonoCv.aspx. accessed 25 January 2016

¹⁹⁸⁷ 'Feed-in Tariff is a contract mechanism between the owner of the renewable electricity generating facility and a purchasing organisation which provides a guaranteed price for generated output (usually providing an enhanced price above wholesale market prices) to the owner. This is generally combined with a purchase obligation. Typically the costs are borne either by consumers or by the public budget' -See Bert Saveyn, Antonio Soria Ramírez and Tobias Wiesenha 'Renewable electricity policy: feed-in tariffs versus tradeable green certificates' (2008) Institute for Prospective Technological Studies

¹⁹⁸⁸ Means 'a body, whatever its legal form, which has been made responsible, pursuant to a measure adopted by the state, for providing a public service under the control of the state and has for that purpose special powers beyond that which result from the normal rules applicable in relations between individuals.' Case C-188/89 *Foster v British Gas plc* ECLI:EU:C:1990:313

¹⁹⁸⁹ Case C-379/98 *PreussenElektra AG v Schleswig AG*, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein ECLI:EU:C:2001:160

¹⁹⁹⁰ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

¹⁹⁹¹ Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060

¹⁹⁹² Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281

- Polluter Pays Principle: due to the regulatory framework's acquiescence to emissions via the Emissions Trading Directive,¹⁹⁹³ the Effort Sharing Decision¹⁹⁹⁴ and the Industrial Emission Directive, the regulatory framework does not enforce the 'polluter pays' principle contained in Article 191(2) TFEU and therefore can be considered in vertical conflict with these Treaty provisions.

Conclusion 2 - The Renewables Regulatory Framework Contains Inconsistencies within Itself

The regulatory framework is composed of both C&C¹⁹⁹⁵ (e.g. Energy Efficiency Directive)¹⁹⁹⁶ and market based (e.g. Emission Trading Directive) Directives, which creates a complexity and in some cases inconsistencies. These inconsistencies result from the layering¹⁹⁹⁷ (new policy goals and instruments on top of what exists), conversion (new instruments based on old goals) and drift¹⁹⁹⁸ (new goals replacing the old without change to the regulatory instruments) in the development of the regulatory framework.

An example of the inconsistencies within the regulatory framework is the Energy Efficiency Directive, a C&C style of directive, which reduces energy demand, whilst the number of emissions certificates granted in accordance with the EU-ETS remains the same. Although both Directives are within the operational competency¹⁹⁹⁹ of the Commission, the number of unused emissions allowances simply grows as electricity demand is reduced. As the number of unused emission allowances increases, the market price for the certificates falls and becomes a less

¹⁹⁹³ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 'To improve and extend the carbon emission trading scheme of the Community' OJ L140/63

¹⁹⁹⁴ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

¹⁹⁹⁵ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) Journal of Sustainability

¹⁹⁹⁶ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

¹⁹⁹⁷ Michael Howlett and Jeremy Rayner, 'Patching v packaging in policy formulation: assessing policy portfolio design' (2013) 1(2) Politics & Governance, 170

¹⁹⁹⁸ Florian Kern and Michael Howlett, 'Implementing transition management as policy reforms: a case study of the dutch energy sector' (2009) 42(4) Policy Sciences, 391, 395

¹⁹⁹⁹ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

efficient incentive to invest in carbon emission reducing technology. These two Directives therefore illustrate a horizontal conflict within the renewable's regulatory framework.

The correction of this issue is set out within the recommendations section below.

Conclusion 3 – The Complexity of the Renewable Electricity Regulatory Framework

Whilst conclusions 1 and 2 considers diagonal and vertical conflicts between the renewable energy regulatory framework and EU primary law, conclusion 3 looks at the regulatory risks that come from within the regulatory structure.

The renewable energy regulatory framework has reduced carbon emissions by facilitating the construction of renewable electricity generating facilities such that nearly 20% of EU electricity is derived from renewables. Furthermore, the regulatory framework is on course to achieve its 20% target by 2020. On this basis, the framework can be considered a success. The regulatory framework satisfies the EU's commitments to global carbon emissions reductions contained in the UNFCCC²⁰⁰⁰ and the COP 21 Paris Climate Change Agreement.²⁰⁰¹

The scale and number of Directives forming the renewables regulatory framework is set out in Chapter 2. The number of and 'interconnectedness' of the Directives can be seen. This complexity is increased by the implementation of these Directives at member state level in a non-harmonised manner, with each member state having a different regulatory support scheme.

Moreover, this complexity often leads to an unco-ordinated²⁰⁰² series of instruments with overlapping policy aims,²⁰⁰³ because of the variety and diversity of end-users²⁰⁰⁴ and the development of the instruments incrementally over many years.²⁰⁰⁵

The complexity was stated, during the empirical phase, to be an issue and a source of regulatory uncertainty and thus risk for Developer Operators. The complexity means that something can be missed and thus can be considered a

²⁰⁰⁰ See http://unfccc.int/parties_and_observers/items/2704.php.

²⁰⁰¹ UNFCCC (2015), 'Adoption of the Paris Agreement: Proposal by the President', Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> accessed 13 July 2016

²⁰⁰² Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 16

²⁰⁰³ Lorraine Murphy, Frits Meijer and Henk Visscher, 'A qualitative evaluation of policy instruments used to improve energy performance of existing private dwellings in the Netherlands' (2012) 45 *Energy Policy*, 459

²⁰⁰⁴ Måns Nilsson, 'Energy governance in the European Union: enabling conditions for a low carbon transition?' in Geert Verbong and Derk Loorbach (eds), *Governing the Energy Transition: Reality, Illusion, or Necessity?*, (Routledge, 2012), 296

²⁰⁰⁵ Florian Kern and Michael Howlett, 'Implementing transition management as policy reforms: a case study of the Dutch energy sector' (2009) 42(4) *Policy Sciences*, 391, 395

compliance risk. This is therefore an issue returned to in the recommendations section below.

Conclusion 4 – The Developer Operators Are Concerned with the Regulatory Framework in Front of Them

From the empirical research it can be concluded that the industry tracks the detailed form and content of the regulatory framework both at the EU and national level and regards any change in the regulatory framework as a regulatory risk. The Developer Operators on a day to day basis seem to apply a legal positivist approach dealing with the regulatory framework as it is, devoid of moral or other overriding objectives.

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The Developer Operators see as a concern any amendment to the regulatory framework that could reduce asset revenues below that assumed in the business plan at the time of the investment decision. The Developer Operators seek to lobby and negotiate as applicable with the Commission and national regulators in relation to those elements of the regulatory framework put in place by either the EU or member states.

As an example of this concern the Developer Operators highlighted the loss of their share of embedded benefits. In contrast to reduced emissions abatement arguments used over priority dispatch,²⁰⁰⁷ or concerns over diagonal or other conflicts, this concern is simply a monetary one. The loss of embedded benefits seems to be inevitable because of the CJEU's finding in *Essent* 2²⁰⁰⁸ and even at member state level with the finding in the *UK Judicial Review*²⁰⁰⁹ on the point.

In contrast to their day to day approach when the Developer Operators took to lobbying for development of the regulatory framework they applied a Dworkin constructive approach looking at political or moral concerns, related to climate change.²⁰¹⁰

²⁰⁰⁶ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983)

²⁰⁰⁷ 'Dispatch of generating facilities means the short-term determination of the economically optimal output of a series of electricity generation facilities connected to an electricity network to meet the electricity demand on that network, at the lowest possible cost, subject to transmission capacity and operational constraints.' - P Palermo 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE; therefore 'Priority Dispatch' is the practice by transmission system operators when dispatching electricity installations they shall give priority to renewable electricity generating installations, thus placing such installations outside the normal dispatch rules' - Article 16(2) (c) Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

²⁰⁰⁸ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

²⁰⁰⁹ *Peak Gen Top Co Ltd & Ors, R (on the application of) v The Gas And Electricity Markets Authority & Anor*, Court of Appeal - Administrative Court, June 22, 2018, [2018] EWHC 1583 (Admin) - relating the process the regulator had followed, where the UK administrative court found in Ofgem's [UK Energy Markets Regulator] favour

²⁰¹⁰ Ronald Dworkin *Law's Empire* (Harvard University Press, 1987), 191

This point is discussed further in the recommendations for further research section below.

Conclusion 5 – Market Based Solutions Bring Economic Efficiency to Carbon Emissions Abatement – Solving the Trilemma²⁰¹¹

The C&C Directives (such as the Renewable Energy Directive,²⁰¹² Energy Efficiency Directive²⁰¹³ and the Effort Sharing Decision)²⁰¹⁴ have been very efficient at achieving the stated emissions reduction and renewable energy targets. However, these Directives fail to take account of the costs of achieving the targets by different organisations and therefore fail to bring the cost efficiencies that a market-based Directives would seek to apply. The differing potential for member states to achieve these targets is recognised to a certain extent by the differential renewable electricity targets placed in the Renewable Energy Directive.²⁰¹⁵

However, this differing potential is static as it is set out within Annex I of the Directive. As a result of this formulation within the Directive, no allowance is made for the development of technology and pricing of solutions that might emerge over the duration of the Directive making the targets for certain member states highly economic to achieve, whilst causing other member states considerable hardship in striving to meet the targets.

As has been shown the elements of the regulatory framework do not resolve trilemma²⁰¹⁶ on an individual basis, however, as a whole, they come closer, with, for example, the Renewable Energy Directive increasing renewable generating capacity and the Emissions Trading Directive reducing carbon emissions. The renewables support schemes of the member states have, however, increased costs for electricity consumers (*German Green Levy*²⁰¹⁷ litigation being an example of the issues).

However, if the COP 21 Paris Climate Change Agreement targets are to be achieved, bringing cost efficiency and market forces to bear will be important, with

²⁰¹¹ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper: See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

²⁰¹² Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

²⁰¹³ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

²⁰¹⁴ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

²⁰¹⁵ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

²⁰¹⁶ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper: See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014) – Trilemma being reliability, sustainability and affordability

²⁰¹⁷ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281

the market favouring the technologies which will produce the largest emissions reduction for the lowest capital outlay. Thus, developing the regulatory framework in this manner will resolve the final element of the trilemma – affordability.

Market based regulations, such as the Emissions Trading Directive and the merging of this carbon market with a new market for the Kyoto Protocol controlled gases within the Effort Sharing Decision, are welcomed by the Developer Operators as investors in the facilities.

It being therefore concluded that focussing on a smaller number of market-based Directives would reduce the internal complexity and inconsistency within the regulatory framework. Moreover, this simplification will minimise the diagonal conflict between the regulatory framework and EU primary law. The regulatory framework will not need to be all things to all parties and thus the multi-solution approach employed in the Renewable Energy Directive²⁰¹⁸ can be ended.

This is an issue discussed further in the recommendations section below.

Conclusion 6 – Energy Efficiency Measures Are the Best Form of Emissions Abatement

Energy efficiency measures have reduced electricity demand across the EU, energy not produced has no carbon emissions. Therefore, regulations that enhance energy efficiency should be strengthened, provided they enhance efficiency at a lower cost than the societal cost (including all capital, operating, pollution, and implementation costs) for delivering the energy, thus representing a ‘public good’.²⁰¹⁹

5.5 Renewables Regulatory Framework that is Not Working - Recommendations for Change

As stated above, the EU’s renewable electricity regulatory framework is complex and multi-dimensional. The framework is legally enforceable at both the EU and member state level due to the national implementation of the various directives which compose the framework.

²⁰¹⁸ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

²⁰¹⁹ Mark Levine, Jonathan Koomey, James McMahon, Alan Sanstad and Eric Hirst, ‘Energy Efficiency Policy and Market Failures’ (2003) 20(1) Annual Review of Energy and the Environment, 535

Whilst this framework has been successful in facilitating the development of renewable generating capacity, it must be reformed to move forward to achieve the EU's 2030²⁰²⁰ and 2050²⁰²¹ renewables strategies. The recommendations below, focussed at the EU level, set out a series of regulatory proposals to aid the refocusing of the regulatory framework, thus reducing its diagonal conflict with EU primary law and enhancing regulatory consistency.

The recommendations are meant to be a consistent and cumulative package. Therefore, accepting and implementing certain of the recommendations without the others would create further inconsistency and complexity within the regulatory framework. The recommendations are made on the basis that the existing framework of Directives is repealed, as it is concluded to be a framework that has been patched,²⁰²² layered²⁰²³ (often resulting in incoherence among goals and inconsistency of instruments),²⁰²⁴ converted²⁰²⁵ and having undergone drift.²⁰²⁶

The first recommendation seeks to remove the diagonal conflicts by the simplification of the regulatory framework. The subsequent recommendations provide a supporting framework to this initial and core recommendation.

Recommendation 1 - EU Method for Legal Diagonal Conflict Resolution

The major conflicts outlined of free movement, distortions of competition and other forms of state aid and the failure to implement the 'polluter pays' principle seem to stem from (i) the payment by the renewable generating facility's host country, of a feed-in tariff or the granting of a tradeable certificate and (ii) the reluctance of the host country to allow others to benefit from renewable electricity that has received these benefits (See Section 2.9.3 and 2.10.7).

²⁰²⁰ SWD(2014) 15 final, "A policy framework for climate and energy in the period from 2020 up to 2030", Section 2.11.1

²⁰²¹ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

²⁰²² patching, are policies and regulatory instruments enacted in order to correct flaws or allow the regulatory framework to adapt to changing circumstances - Michael Howlett and Jeremy Rayner, 'Patching v packaging in policy formulation: assessing policy portfolio design' (2013) 1(2) Politics & Governance, 170, 177

²⁰²³ Layering refers to the process of adding new policy goals and instruments to existing policy mixes without discarding previous measures - Michael Howlett and Jeremy Rayner, 'Patching v packaging in policy formulation: assessing policy portfolio design' (2013) 1(2) Politics & Governance, 170

²⁰²⁴ Michael Howlett and Jeremy Rayner, 'Design principles for policy mixes: cohesion and coherence in "New governance arrangements"', (2007) 26(4) Policy & Society, 1

²⁰²⁵ Conversion is where new instrument mixes evolve while holding old goals constant. If the old goals lack coherence, then changes in policy instruments may either reduce levels of implementation conflicts or enhance them, but are unlikely to succeed in matching means and ends of policy - Florian Kern and Michael Howlett, 'Implementing transition management as policy reforms: a case study of the Dutch energy sector' (2009) 42(4) Policy Sciences 391, 395

²⁰²⁶ drift occurs when new goals replace old ones without changing the instruments used to implement them. These instruments then can become inconsistent with the new goals and most likely ineffective in achieving them - Ibid

Therefore, to overcome the negatives of the conflicts set out in Conclusion 1 it is proposed to completely replace the regulatory framework. This replacement is a process in which a fundamental restructuring of both the goals and regulatory instruments takes place, to form a coherent and consistent new regulatory framework.²⁰²⁷ The political will to undertake such a process is not to be underestimated, however, it is focused on economic efficiency to maximise carbon emissions reduction that is the main driver. Thus, the foundations upon which the political discussions can take place are simplification, economic efficiency and harmonisation of regulatory structure across the EU.²⁰²⁸

Additionally, the need to have unanimity of voting in relation to this new instrument is removed as it does not directly affect the choice between energy resources as would be required by Article 194(2) and 194(3) TFEU. Therefore, the issue of the Renewable Energy Directive²⁰²⁹ trying to be all things to all parties to achieve this unanimity is removed. Also, the wide discretion granted to member states, in relation to the national renewables support schemes put in place, is also removed.

This proposal could be regarded as a fiscal measure and as such, in accordance with Article 194(3) TFEU, require a unanimous decision in Council. Such a unanimous position could be considered as placing a difficult legislative pathway in front of any Directive amendments or new Directive to bring about this recommendation. However, the simplicity of the regulatory framework and the reduced burden on electricity consumers in many EU countries because of greater capital efficiency in developing renewable electricity facilities are factors which would draw the EU member states together.

In considering the political dimension as stated in Section 2.12 certain member states have declared against harmonised renewable electricity regulatory instruments; for example German Chancellor, Angela Merkel, indicated that harmonisation should occur 'at a later stage'.²⁰³⁰ However, this revised regulatory structure removes the direct payment by German electricity consumers of a support

²⁰²⁷ Florian Kern and Michael Howlett, 'Implementing transition management as policy reforms: a case study of the dutch energy sector' *Policy Sciences* (2009) 42(4) 391; See Also Michael Howlett and Jeremy Rayner, 'Design principles for policy mixes: cohesion and coherence in "New governance arrangements"' (2007) 26(4) *Policy & Society* 1

²⁰²⁸ Peter Cameron, 'The Internal Energy Market – Redefining Objectives' Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 5

²⁰²⁹ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>

²⁰³⁰ Ibid,

levy to electricity which has been a focus of the position pressed by Germany with the Commission in relation to state aid in recent years.

This new measure is essentially environmental, and is an enhancement to the existing Emissions Trading Directive, a Directive held by the CJEU²⁰³¹ to be within the competence²⁰³² of the Commission (See Section 4.6.1). Therefore, should the allocation of emissions allowance for free be removed and thus the need for a national allocation plan, as set out in Sections 2.10.1 and 4.6, the interaction with the multiplicity of member states is removed.

The goal is to focus on carbon emissions reduction rather than renewable generation capacity (See Recommendation 2). The instrument to focus the electricity industry on this goal is the EU-ETS, thereby bringing a market based regulatory solution to the fore and allowing economic efficiency to be used rather than command and control²⁰³³ regulation that seeks to achieve a target irrespective of the costs of achieving the target for some member states and market operators.

By using an emissions trading market, the need for member state by member state support schemes is removed. Therefore, the need to restrict free movement of electricity is removed, Renewable electricity facilities no longer have their export or sales price supported via specific instruments, put in place by the member state, not generally available to other forms of generation. Lastly, as such support schemes are put in place by the member state, should they distort competition they are regarded as state aid. Thus, careful market design is not needed to ensure the state aid does not distort competition as was found in the *Vent De Colère*,²⁰³⁴ *Austrian Green Levy*²⁰³⁵ and *German Green Levy*²⁰³⁶ cases (See Sections 3.5.10 to 3.5.12) because the member state is not involved in the market design or the flow of monies within the market and such a finding that state resources have been used cannot occur.

²⁰³¹ Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

²⁰³² Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

²⁰³³ Command and Control Regulation being 'the direct regulation of an activity by legislation that states what is permitted' - Phil McManus *Environmental Regulation* (Elsevier, 2009); See also Beatriz Junquera and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) *Journal of Sustainability*

²⁰³⁴ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

²⁰³⁵ Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060

²⁰³⁶ Case T-47/15 *Germany v Commission*, ECLI:EU:T:2016:281

All electricity industry players would purchase emissions credits on the same harmonised market. With all EU member states using the same market, fair price discovery,²⁰³⁷ transparency and the lowering of transaction costs²⁰³⁸ for carbon emissions is seen as being highly likely.

This structure would result in the number of regulatory instruments being reduced and thus the possibility of changes to the regulatory framework being missed: a concern for some respondents during the empirical research, is removed.

With a reduced number of regulatory instruments, at both EU and member state level, the potential for horizontal conflict, as was found between the Emissions Trading Directive and the Energy Efficiency Directive,²⁰³⁹ in Section 2.10.4, is also removed.

Overall such a simplified regulatory framework is recommended.

Recommendation 2 - Call for Regulatory Clarity & Consistency – Reduction in the Number of Directives

The use of electricity has undergone significant change since the need for climate change abatement was recognised in the early 1990s and will most likely change in the future. At the same time, governments are asked to steer electricity production and consumption to solve the ‘trilemma’ of reliability, sustainability and affordability,²⁰⁴⁰ as well as reducing climate change and achieving market liberalisation.²⁰⁴¹

Therefore, in seeking to address these high-level goals as well as some very specific external targets contained in the UNFCCC’s²⁰⁴² the Kyoto Protocol²⁰⁴³ and the COP 21²⁰⁴⁴ global climate change agreement, as set out in Chapter 2 and

²⁰³⁷ Price discovery is the overall process, whether explicit or inferred, of setting the spot price of an asset or service but most commonly the proper price of a security, commodity, or currency based on many factors. These include supply and demand, intangible factors such as investor risk attitudes and the overall economic and geopolitical environment. Simply put, it is where a buyer and a seller agree on a price and a transaction occurs. Definition from <https://www.investopedia.com/terms/p/pricediscovery.asp#ixzz5BR9NKHG> accessed 30 March 2018

²⁰³⁸ Nils Meyer-Ohlendorf, Benjamin Görlach and Ennid Roberts, ‘EU Effort Sharing Decision after 2020: Auctioning of AEAs’ (19 January 2016) Ecological Institute, Berlin

²⁰³⁹ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1 Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF>

²⁰⁴⁰ David Newbury ‘Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma’ [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

²⁰⁴¹ Christian Egenhofer, *Integrating Security of Supply, Market Liberalization and Climate Change Appearing in Michael Emerson, Readings in European Security*, (Vol 4 Centre for European Policy Studies, 2007); See also Hazel Nash, ‘The European Commission’s Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan’ (2009) 17 *Journal of Cleaner Production* 496

²⁰⁴² See http://unfccc.int/parties_and_observers/items/2704.php.

²⁰⁴³ See http://unfccc.int/kyoto-protocol/status_of_ratification/items/2613.php.

²⁰⁴⁴ UNFCCC (2015), ‘Adoption of the Paris Agreement: Proposal by the President’, Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (accessed 13 July 2016).

Conclusion 2 the EU has put in place a complex and multifaceted regulatory structure for renewable electricity,²⁰⁴⁵ that some consider unsustainable.²⁰⁴⁶

The empirical research found that market operators view the number of Directives a risk, such that something could be missed, and mitigations are not put in place early enough in an asset's lifecycle to protect revenues (See Section 4.6 Theme 1.1). The empirical research also found that this inconsistency and complexity risk was translated by the Developer Operators of renewable generating facilities into higher rates of return and as such increased prices for consumers. Therefore, to overcome the complexity and inconsistency issues set out in Conclusions 2 and 3 respectively, it is proposed to reduce the number of Directives and to focus the regulatory structure on only three key Directives. These Directives being (i) the Industrial Emissions Directive,²⁰⁴⁷ as this controls emissions of gases, dust and ash, as well as applying best practice in plant design going forward, (ii) as set out in Conclusion 5, the Energy Efficiency Directive, as this will ensure that energy used and produced is done in the best manner. Also, energy saved by the consumer provides further free cash within the commercial and domestic consumer setting for the purchase of additional energy efficient apparatus²⁰⁴⁸ and (iii) As set out in Recommendation 1, the European Carbon Emissions Trading Directive, as this allows price discovery of the price for carbon. The EU-ETS should be broadened in scope to include the Kyoto gases, covered by the Effort Sharing Decision²⁰⁴⁹ currently – this being in fact a current EU policy (See Section 2.10.2).

These Directives are chosen as they focus efforts on the reduction in energy usage and emissions which is the key element of the whole regulatory framework and directly correlated to global temperature risk. Hence such a simplified structure is believed to remove the diagonal conflicts (Conclusion 1) outlined as all measures can be harmonised across the EU (Conclusion 3). This structure works, as the research has found that future renewable electricity facilities will have an output price at or near grid parity with coal and gas generation, and therefore a renewable support scheme that provides significant revenue uplift to renewable electricity generation facilities is not needed for new facilities.

²⁰⁴⁵ Bruno Simma, 'Bilateralism and Community Interest in the Law of State Responsibility' in Yoram Dinstein (ed), *International Law at a Time of Perplexity: Essays in Honour of Shabtai Rosenne* (Martinus Nijhoff 1989) 822-23

²⁰⁴⁶ Raphael Heffron and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

²⁰⁴⁷ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 Available at <http://ec.europa.eu/environment/industry/stationary/ied/faq.htm>

²⁰⁴⁸ Karen Turner and Antonios Katris, 'A "Carbon Saving Multiplier" as an alternative to rebound in considering reduced energy supply chain requirements from energy efficiency?' (2017) 103 Energy Policy 249

²⁰⁴⁹ Council Decision No 406/2009/EC 23 April 2009 'Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision)

Recommendation 3 - Carbon Pricing as Regulatory Change

As stated above, the EU's renewables regulatory framework is a complex scheme of both C&C and market-based Directives. To bring market forces to bear on the abatement of carbon emissions, as was set out in Conclusion 4, the regulatory framework should be focussed on market-based mechanisms. Focusing on a carbon trading mechanism will bring market forces to bear and will resolve the trilemma²⁰⁵⁰ with increased reliability due to the best technology being applied, sustainability being increased by reduced carbon emissions and affordability as the most efficient pricing will be applied.

It has been previously set out that policy analysis should look at the performance of the entire regulatory framework and the mix of instruments, and not analyse individual instruments in isolation. Additionally, it has been stated that fixed feed-in tariff support schemes impact wholesale market prices and operation, whilst more market-oriented renewables support schemes decrease the extent to which markets are affected.²⁰⁵¹ Hence, as a traded instrument, an emissions trading scheme is recommended to be the focus of the regulatory framework used to achieve emissions reductions.²⁰⁵²

Section 3.6 has shown that the over-allocation of emission allowances has undermined the EU-ETS price for carbon emission and therefore the effectiveness of the market,²⁰⁵³ such that more than a decade after its commencement, coal generation was able to undergo a renaissance²⁰⁵⁴ of output. Additionally, as the function of global warming is really a feature of the volume (stock) of carbon emissions in the atmosphere and not the flow rate of emissions from electricity generation and other sources²⁰⁵⁵ it is argued that greater emphasis must be given to the Carbon Capture and Storage Directive.²⁰⁵⁶

²⁰⁵⁰ David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper: See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014) – Trilemma being reliability, sustainability and affordability

²⁰⁵¹ Jenny Winkler, Alberto Gaio, Benjamin Pfluger and Mario Ragwitz, 'Impact of renewables on electricity markets – Do support schemes matter?' (2016) 93 *Energy Economics* 157

²⁰⁵² Benjamin Görlach 'Emissions Trading in the Climate Policy Instrument Mix: understanding and Managing Interactions with other Policy Instruments', (2014) 25(34) *Energy & Environment* 733

²⁰⁵³ Frank Maarten and Jan Venman, 'The effect of allocation above emissions and price uncertainty on abatement investments under the EU ETS' (2016) 125 *Journal of Cleaner Production*, 595

²⁰⁵⁴ The 'Coal Renaissance' is a term given to an increased use of coal generation due to pricing and the restriction of other generation capacity types - Michael Le Page, 'Coal renaissance means switching to plan B on climate change' (2015) 3030 *New Scientist*; See Also Vanessa Mock, 'Coal Renaissance Risks Tarnishing the EU's Green-Energy Credentials' 2 Sept 2014 *The Wall Street Journal*

²⁰⁵⁵ Glenn Harrison 'Stocks and Flows' in Steven Durlauf and Lawrence Blume (eds) *The New Palgrave Dictionary of Economics* (Palgrave Macmillan, 2008); See Also Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change Law* (Oxford University Press, 2017)

²⁰⁵⁶ Council Directive 2009/31/EC 23 April 2009 on the geological storage of carbon dioxide OJ L140/114 (Carbon Capture & Storage Directive)

Although these imperfect carbon prices can be concluded to have resulted from political concerns regarding carbon's effects on energy prices and the national allocation plans set out in Section 3.6.1, they still exist and as such the market is undermined, leaving renewable energy support schemes as the main driver for renewable capacity.²⁰⁵⁷ Therefore the combination of the EU-ETS carbon prices and renewable energy support schemes must be optimised to achieve mitigation targets at a moderate additional energy price.²⁰⁵⁸

It is known that the EU has formed a long-term solution to the low and ineffective market price via a market stability reserve, which starts operating in January 2019.²⁰⁵⁹ The reserve is designed to reduce the current surplus of allowances and improve the system's robustness. The 900 million allowances that were back-loaded in 2014-2016 will be transferred to the reserve rather than auctioned in 2019-2020.²⁰⁶⁰ Hence it is recommended that as many unallocated allowances are possible should be transferred to the stability reserve.

As pointed out in Section 2.7, renewable electricity is becoming cost-competitive with fossil fuels and thus reaching grid parity pricing in the near future.²⁰⁶¹ As such, carbon pricing, via the EU-ETS, is argued to be a more cost-effective way than subsidies or renewable support schemes, of cutting emissions by engaging market based solutions.²⁰⁶² Also carbon emissions reduction should be the focus of the regulatory framework rather than seeking to achieve this goal via the proxy of a volume of renewable generation.²⁰⁶³

As emissions trading promises the achievement of a pre-defined environmental outcome of at least cost, it is recommended that the operation of the reserve account is strengthened so that the carbon price becomes a true incentive to investing in carbon emissions abatement assets.²⁰⁶⁴ It is known that between

²⁰⁵⁷ Matthias Kalkuhl, Ottmar Edenhofer and Kai Lessmann, 'Renewable energy subsidies: Second-best policy or fatal aberration for mitigation?' (2013) 35(3) *Resource and Energy Economics*, 217

²⁰⁵⁸ *Ibid*

²⁰⁵⁹ EU Decision 2015/1814 of 6 October 2015 'the establishment and operation of a market stability reserve for the Union carbon emission trading scheme and amending Directive 2003/87/EC' OJ L 264/1

²⁰⁶⁰ EU Communication 2801 15 May 2018 'Publication of the total number of allowances in circulation in 2017 for the purposes of the Market Stability Reserve under the EU Emissions Trading System established by Directive 2003/87/EC'

²⁰⁶¹ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

²⁰⁶² Samuela Bassi, Maria Carvalho, Baran Doda and Sam Fankhauser, 'Credible, effective and publicly acceptable policies to decarbonise the European Union' [2017] The Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science Working Paper - <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2017/12/Credible-effective-and-publicly-acceptable-policies-to-decarbonise-the-European-Union-Final-report-2.pdf> accessed 12 July 2018

²⁰⁶³ YingFan, Jun-Jun Jia, XinWang and Jin-HuaXu, 'What policy adjustments in the EU ETS truly affected the carbon prices?' (2017) 103 *Energy Polict*, 145

²⁰⁶⁴ Anne Schopp, William Acworth, Daniel Huppmann and Karsten Neuhoff, 'Modelling a Market Stability Reserve in Carbon Markets' [2015] DIW Berlin Discussion Paper No. 1483; See also Raphael Heffron and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

2019 and 2023, the number of allowances put into the reserve will double to 24% of the allowances in circulation.²⁰⁶⁵ It is, however, recommended that the reserve account is refocussed to achieve a carbon price rather than a simple number of allowances in free circulation, irrespective of resultant price for allowances. Focussing on a carbon price will result in price stability, against which investments may be undertaken.²⁰⁶⁶

Recommendation 4 – Electricity Grid Interconnection & Access to Harmonised Regulation

To remove the transmission constraints that bring about the requirement for a series of nationally focussed electricity markets across the EU and thus the diagonal conflicts outlined in Conclusion 1, it is recommended that the level of transmission interconnection between member states is increased. Increasing the level of transmission interconnection capacity across the EU will reduce the level of transmission curtailment²⁰⁶⁷ and allow renewable energy to flow from source to consumer. This recommendation would allow renewable facilities to be developed in locations with the best wind and solar resources and in so doing produce the lowest cost output.

This would help to fulfil the Commission's stated aim of allowing *energy to flow 'freely in Europe so that the electricity produced by a windmill in one country can reach the consumers in another.'*²⁰⁶⁸

It is recognised that moving to an integrated and interconnected transmission system will require significant structural changes in the existing assets of the transmission system operators.²⁰⁶⁹ These changes may well only occur at the instigation of EU and member state legislators and upon the changed perception of EU citizens to transmission assets.²⁰⁷⁰

²⁰⁶⁵ https://ec.europa.eu/clima/policies/ets/revision_en#tab-0-0

²⁰⁶⁶ Ottmar Edenhofer, Christian Flachsland, Christoph Wolff, Lisa Katharina Schmid, Anna Leipprand, Nicolas Koch, Ulrike Kornek and Michael Pahle, 'Decarbonisation and EU ETS Reform: Introducing a price floor to drive low-carbon investments' [2017] Mercator Research Institute on Global Commons and Climate Change Working Paper

²⁰⁶⁷ Curtailment is a forced reduction in the output of an electricity generation facility from what it could otherwise produce given available resources, typically as a result of capacity constraints in the transmission system - Lori Bird, Jaquelin Cochran, and Xi Wang, 'Wind and Solar Energy Curtailment: Experience and Practices in the United States' [2014] National Renewable Energy Laboratory Working Paper; See Also Henrik Klinge Jacobsen and Sascha Thorsten Schröder, 'Curtailment of renewable generation: Economic optimality and incentives' (2012) 49 Energy Policy, 663

²⁰⁶⁸ P/18/2122 Commission Investigation TenneT TSO GmbH's – 19 March 2018 available at

http://europa.eu/rapid/press-release_IP-18-2122_en.htm accessed 4 April 2018

²⁰⁶⁹ Raphael Heffron and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

²⁰⁷⁰ Frank Geels, Florian Kern, Gerhard Fuchs, Nele Hinderer, Gregor Kungl, Josephine Mylan, Mario Neukirch, and Sandra Wassermann, 'The enactment of socio-technical transition pathways: A reformulated typology and a comparative multi-level analysis of the German and UK low-carbon electricity transitions (1990–2014)' (2016) 45(4) Research Policy, 896

With a transmission network that can allow free flow care should be taken to ensure transport losses or constraints on the electricity transmission system dissipating the benefit²⁰⁷¹ (See Recommendation 5).

The harmonised support system based on emissions trading would bring to bear market forces by requiring projects to trade allowance via an auction system. This means that the reductions in capital costs being brought about by economies of scale and improved technology can be passed through to the consumer.

Recommendation 5 - Nodal Pricing & Transmission Losses to Manage Free for All

Undertaking an electricity network optimisation allows the calculation of nodal electricity prices (See Annex 2.10) on the basis of the opportunity costs of exports.²⁰⁷² However, transmission losses and curtailment²⁰⁷³ (technical capacity constraints) give rise to large price differences between nodes and regions.²⁰⁷⁴ These optimisation methods can be used to develop a long-run marginal cost²⁰⁷⁵ for electricity including generation and transmission costs.²⁰⁷⁶ This means that the cost of transmission will be included within the price so the further a unit of electricity is transported the higher its price. In this way a rational purchase decision can be made by the buyer at the point a trade is executed.

Including both generation and transmission costs in the price for electricity will manage any free for all in seeking to transport electricity under a harmonised renewables support mechanism. Such a method will also manage the costs or allocation problem of transmission capacity.

This policy recommendation is made for consistency²⁰⁷⁷ reasons, to work with the realities of the transmission network. A combination of a regulatory framework based on a revised EU-ETS, increased transmission interconnection and

²⁰⁷¹ David Jacobs *Renewable Energy Policy Convergence in the EU The Evolution of Feed-in Tariffs in Germany, Spain and France* (Taylor & Francis, 2012)

²⁰⁷² Fred Schweppe, Michael Caramanis, Richard Tabors and Roger Bohn *Spot Pricing of Electricity* (Springer, 1988); See Also Ignacio Perez-Arriaga, Luis Olmos, and Michel Rivier, 'Transmission Pricing' in Juan Rosellón and Tarjei Kristiansen (eds.), *Financial Transmission Rights, Lecture Notes in Energy* (Springer, 2013)

²⁰⁷³ Curtailment is a forced reduction in the output of an electricity generation facility from what it could otherwise produce given available resources, typically as a result of capacity constraints in the transmission system - Lori Bird, Jaquelin Cochran, and Xi Wang, 'Wind and Solar Energy Curtailment: Experience and Practices in the United States' [2014] National Renewable Energy Laboratory Working Paper; See Also Henrik Klinge Jacobsen and Sascha Thorsten Schröder, 'Curtailment of renewable generation: Economic optimality and incentives' (2012) 49 *Energy Policy*, 663

²⁰⁷⁴ Jean-Thomas Bernard and Chantal Guertin, 'Nodal Pricing and Transmission Losses: An Application to a Hydroelectric Power System' [2002] Université Laval, Sainte-Foy, Québec, Canada Working Paper

²⁰⁷⁵ Longterm marginal cost is the increase in costs for meeting consumers' future demand

²⁰⁷⁶ Yan Qing-you, Sun Yi-xin, Qin Chao and Tan Zhong-fu, 'The Pricing model for Transmission and Distribution Tariff Under Different Voltage Levels Based on the Long-run Marginal Cost Method' (2015) 9 *Electrical & Electronic Engineering Journal*, 347

²⁰⁷⁷ Consistency being seen as the ability of multiple policy tools to reinforce rather than undermine each other in the pursuit of policy goals - Michael Howlett and Jeremy Rayner, 'Patching v packaging in policy formulation: assessing policy portfolio design' (2013) 1(2) *Politics & Governance*, 170

the transmission pricing scheme outlined in this recommendation 5 will remove diagonal conflict as renewable energy will be able to flow between member states readily on a unified cost basis.

5.6 Limitations of the Research

The main strength of the study is the combination of the doctrinal research which has identified several conflicts between EU free trade principles and the renewables regulatory framework and the empirical research which showed the importance of managing these conflicts to market operators.

The findings of this research should however, be seen in light of some limitations, these being divided into the categories of 'methodology' and 'researcher'.

The focus on renewable electricity makes a theoretical choice in the development of the diagonal conflicts. Thus, other forms of renewable energy could be considered as part of any future research.

The study has been able to set out and analyse a detailed description of the methods used by developer operators to overcome the conflicts outlined. However, in terms of methodology, additional empirical participants would increase the validity of the study. In seeking additional participants these should be prioritised from consumer organisations to give additional insights.

The theoretical sections focus on conflict resolution within judicial processes, whereas the recommendations focus on conflict resolution by legislators. Thus, further research could address the socio-political aspects of legal conflict resolution.

The 'researcher' limitations include, the time available to complete the research means that the empirical research is essentially a snapshot in time and thus the research contains limited longitudinal based data. This is a feature discussed further in the further research section below.

Additionally, despite the industry knowledge of the researcher and thus clear attempts to guard against such an outcome the interview technique used during the empirical phase may have induced conservatism in the answers given by the respondents as they wish to deal with the operational regulatory framework and cannot discuss ongoing litigation. Therefore, this might underestimate the importance to market participants of the conflicts outlined.²⁰⁷⁸

Lastly, whilst all empirical respondents had a high level of fluency in English, this was not the native language of all respondents. Also, with respondents working

²⁰⁷⁸ Stéphane Brutus, Herman Aguinis and Ulrich Wassmer, 'Self-Reported Limitations and Future Directions in Scholarly Reports: Analysis and Recommendations' (2013) 39(1) *Journal of Management*, 48

in Germany, France and the UK (it being noted that for some of the UK based respondents English was not their native language) the colloquial meaning of certain words needed to be checked during the interviews. Whilst care was taken to ensure there was no misinterpretation due to colloquial usage, there may be one or two instances where this has unknowingly occurred.

5.7 Where to Next

In any future developments of the renewables regulatory framework the EU and the member states need to consider how the framework should or ought to regulate the sector to provide a fair structure for society and not just the economic operators.

If this is achieved with true engagement of all stakeholders, to develop a better and more stable regulatory framework, rather than engagement to achieve acceptance, the developer operators will obtain the stable regulatory framework they desire.²⁰⁷⁹

Any future research should seek to include additional empirical participants from organisations associated with the consumption of renewable electricity to give additional insights. Furthermore, any additional research should plan to include follow up interviews to check the views of empirical respondents with regards to issues that are important and if these issues have changed over time.

Based on the conclusion that the renewables regulatory framework conflicts with several elements of EU free trade principles and the recommendation to simplify the regulatory framework to remove these conflicts future work should detail this simplified framework. In seeking to implement the streamlined regulatory framework future research output should provide key drafting principles of the regulatory framework, developing into elements of the future Directives.

Future research could diverge into an electro-technical stream which looks at the potential for increased interconnection of electricity networks, considering funding and state aid, as well as issues such as network capacity trading and consent planning, to allow a single market to emerge. The second research path could be to consider the future of the simplified and focused regulatory framework and how this could be implemented.

²⁰⁷⁹ Frances Bowen, Aloysius Newenham-Kahindi and Irene Herremans, 'When Suits Meet Roots: The Antecedents and Consequences of Community Engagement Strategy' (2010) 95(2) *Journal of Business Ethics* 297

Both future research streams should also measure themselves against the need to resolve the electricity 'trilemma'²⁰⁸⁰ and the robustness of the recommendations from this future research against the EU's goal of a 40% reduction in carbon emissions by 2030²⁰⁸¹ and an 80% to 95%²⁰⁸² reduction by 2050.²⁰⁸³

²⁰⁸⁰ Trilemma of reliability, sustainability and affordability – See David Newbury 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper See Also Raphael Heffron *Energy Law: An Introduction* (Springer, 2014)

²⁰⁸¹ EU COM 482/2016 'on binding annual carbon emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement' available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0482> accessed 1 May 2018, Recital 1

²⁰⁸² European Council & Presidency Conclusions 29 & 30 October 2009, available at www.consilium.europa.eu/doc/srv?l=en&f=st%2015265%202009%20INIT accessed 15 September 2015

²⁰⁸³ COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 Mar 2011) see www.ec.europa.eu/clima/policies/strategies/2050_en#tab-0-1

Bibliography

Primary Legislation & Other Treaties

Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-Treaty-1994/energy-charter-Treaty>

UN Framework Convention on Climate Change - http://unfccc.int/parties_and_observers/items/2704.php.

Kyoto Protocol - http://unfccc.int/kyoto-protocol/status_of_ratification/items/2613.php

Paris Climate Change Agreement (COP 21) - 'Adoption of the Paris Agreement: Proposal by the President', Draft Decision, 12 December 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>

Treaty on European Union 1992 (also referred to as the Maastricht Treaty)

Treaty on the Function of the European Union – the consolidated Treaty following the execution of the Treaty of Lisbon 2009

Treaty of Rome 1957

Vienna Convention on the Law of Treaties 1969

Secondary Legislation

EU Directive (1978/176/EEC) Disposal of titanium dioxide

EU Directive (1982/883/EEC) monitoring and surveillance of titanium dioxide

EU Directive (1992/43/EEC) the conservation of natural habitats of wild fauna and flora (Habitat Directive) OJ L206/7

EU Directive (1992/112/EEC) programs for the reduction of pollution of titanium dioxide

EU Directive (1996/92/EC) concerning common rules for the internal market in electricity (Electricity Markets Directive)

EU Directive (1999/13/EC) 'on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations' OJ L85/1

EU Directive (1998/30/EC) on common rules for the internal market in natural gas (Gas Market Directive)

EU Directive 2000/60/EC 'a framework for Community action in the field of water policy' OJ L 327/1

EU Directive (2000/76/EC) 'on the incineration of waste' OJ L 332

EU Directive (2001/80/EC) 'on the limitation of emissions of certain pollutants into the air from large combustion plants' OJ L 309 (Large Combustion Plant Directive)

EU Directive (2003/87/EC) 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L 275 (2003 Emissions Trading Directive)

Directive (2003/96/EC) 27 October 2003 'Restructuring the Community framework for the taxation of energy products and electricity' OJ L 283 (Energy Taxation Directive)

EU Directive (2004/35/EC) 'environmental liability with regard to the prevention and remedying of environmental damage is based on the polluter pays principle'

EU Directive (2005/89/EC) 'measures to safeguard security of electricity supply and infrastructure investment' OJ L 33/22

Directive (2008/1/EC), 'concerning integrated pollution prevention and control' OJ L 24/8

EU Directive (2008/56/EC) 'establishing a framework for community action on marine water quality in the field of marine environmental policy' OJ L164/19

EU Directive (2009/28/EC) 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive)

EU Directive (2009/29/EC) To improve and extend the carbon emission trading scheme of the Community OJ L140/63 (2009 Emissions Trading Directive)

EU Directive (2009/31/EC) on the geological storage of carbon dioxide OJ L140/114 (Carbon Capture and Storage Directive)

EU Directive (2009/72/EC), 'concerning common rules for the internal market in electricity' (Electricity Markets Directive)

EU Directive (2009/125/EC) 'establishing a framework for the setting of eco-design requirements for energy-related products' OJ L285/10

EU Directive (2009/147/EC) 'the conservation of wild birds' OJ L20/7

EU Decision (406/2009/EC) 'The effort of Member States to reduce their carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (known as the 'Effort Sharing Decision'), OJ L 140/137

EU Directive (2010/75/EC) Industrial Emissions (integrated pollution prevention and control) OJ L334/17

EU Directive (2012/27/EU) Energy Efficiency Directive OJ L315

EU Directive (2014/65/EU) on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU Text with EEA relevance OJ L 173

EU Regulation (2000/2493/EC) 'measures to promote the full integration of the environmental dimension in the development process of developing countries' OJ L288/1

EU Regulation (2008/764) 'Laying down procedures relating to the application of certain national technical rules to products lawfully marketed in another member state and repealing Decision No 3052/95/EC OJ L 218/21'

EU Regulation (600/2012/EC) 'the verification of carbon emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC' OJ L 181/1

EU Regulation (347/2013/EC) Regulation on Guidelines for Trans-European Energy Infrastructure

EU Regulation (2014/651/EC) declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. General Block Exemption Regulations for State aid ('GBER')

EU Regulation (1348/2014/EC) on data reporting implementing Article 8(2) and Article 8(6) of Regulation (EU) No 1227/2011 OJ L336

EU Regulation (2015/1588/EC) the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid

Regulation (EU) 2016/679 'The protection of natural persons with regard to the processing of personal data and on the free movement of such data' (GDPR) OJ L 119/1

EU Regulation (2016/1719/EC) 'establishing a guideline on forward capacity allocation' OJ L 259/42 (Capacity Allocation Regulations)

EU Regulation (2016/231/EC) 'binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement'

EU Regulation (2017/1485/EC) 'establishing a guideline on electricity transmission system operation' (Network Code on System Operation)

EU Regulation (2018/353/EC) 'Establishment to facilitate a Framework for Sustainable Investment' Explanatory Memorandum 2'

EU COM (2014/C 200/01)'Guidelines on State aid for environmental protection and energy 2014-2020'

Member State & Third Country Legislation

Austrian Law – The Green Electricity Act (Ökostromgesetz 2009; Federal Gazette No 114/2008)

Finland Law No 1473/94 Excise Duty Act

Finland Law No 1396/2010 Electricity Produced from Renewable Energy Sources Act

German Law - The Gesetz zur Sicherung des Einsatzes von Steinkohle in der Verstromung und zur Änderung des Atomgesetzes und des Stromeinspeisungsgesetzes (Law ensuring the supply of coal to power stations and amending the Law on Nuclear Energy and the Stromeinspeisungsgesetz) of 19 July 1994 (BGBl. 1994I, p. 1618; ('the 1994 Coal Law'))

German Law, Erneuerbare Energien Gesetz (2000) - Renewable Energy Sources Act

German Law - Renewable Energy Sources Act 2012 (Erneuerbare Energien Gesetz – 'EEG 2012')

German Law - Renewable Energy Sources Act 2014 (Erneuerbare Energien Gesetz – 'EEG 2014')

German Law - Renewable Energy Sources Act 2017 (Erneuerbare Energien Gesetz – 'EEG 2017')

Swedish Law - Electricity Certificates Act (2003)

Swedish Law – Electricity Certificates Act (2011)

The Energy Charter Treaty 1994 – available at <http://www.energycharter.org/process/energy-charter-Treaty-1994/energy-charter-Treaty>

UN Framework Convention on Climate Change - http://unfccc.int/parties_and_observers/items/2704.php

Kyoto Protocol - http://unfccc.int/kyoto-protocol/status_of_ratification/items/2613.php

EU Cases

Opinion C-2/13 'Accession of the European Union to the European Convention for the Protection of Human Rights and Fundamental Freedoms - Compatibility of the Draft Agreement With the EU and FEU Treaties' ECLI:EU:C:2014:2454

Opinion 1/91 Agreement between EEC & European Economic Area ECLI:EU:C:1991:490

Case T-358/94 *Air France v Commission*, ECLI:EU:T:1996:194

Case C-389/96 *Aher-Waggon GmbH v Germany* ECLI:EU:C:1998:357 Cases C-128/03 and C-129/03 *AEM and AEM Torino v Autorità per l'energia elettrica e per il gas* ECLI:EU:C:2005:224 Case C-366/10 *Air Transport Association of America v Secretary of State for Energy and Climate Change* ECLI:EU:C:2011:864

Case C-142/05, *Åklagaren v Mickelsson and Roos* ECLI:EU:C:2009:336

Case T-177/10 *Alcoa Trasformazioni v Commission* ECLI:EU:T:2014:897 Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037

Case C-573/12 *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:37 - Opinion of AG Bot

Case C-275/13, *Elcogas SA v Administracion del Estado & Iberdrola SA*, ECLI:EU:C:2014:2314

Joined Cases C-359/11 and C-400/11 *Alexandra Schulz v Technische Werke Schussental GmbH und Co. KG and Josef Egbringhoff v Stadtwerke Ahaus GmbH*, ECLI:EU:C:2014:2317

Case C-158-159/04 *Alfa Vita Vassilopoulos* ECLI:EU:C:2006:212 (opinion of AG Maduro)

Case C-57/65 *Alfons Lütticke GmbH v Hauptzollamt Sarrelouis* ECLI:EU:C:1966:34

Case 26/62, *NV Algemene Transport-en Expeditie Onderneming Van Gend en Loos v Nederlandse Administratie der Belastingen* ECLI:EU:C:1963:1

Cases T-298/97, T-312/97, T-313/97, T-315/97, T-600/97 to 607/97, T-1/98, T-3/98 to T-6/98 and T-23/98 *Alzetta v Commission* ECLI:EU:T:2000:151, para 141-147; Case C-280/00 *Altmark Trans GmbH and Regierungspräsidium Magdeburg v Nahverkehrsgesellschaft Altmark GmbH, and Oberbundesanwalt beim Bundesverwaltungsgericht* ECLI:EU:C:2003:415

Case C-97/11 *Amia SpA, in liquidation v Provincia Regionale di Palermo* ECLI:EU:C:2012:306

Case T-419/03 *Altsoff Recycling Austria v Commission* ECLI:EU:T:2011:102

Case T-141/00, *Artegodan v Commission* ECLI:EU:T:2002:283

Case C-551/14 *Arctic Paper Mochenwangen v Commission* ECLI:EU:C:2016:684

Cases C-264/01, C-306/01, C-354/01 and C-355/01 *AOK Bundesverband v Ichthyol-Gesellschaft Cordes Hermani* ECLI:EU:C:2004:150

Case C-127/07 *Arcelor Atlantique and Lorraine* ECLI:EU:C:2008:728

Case C-59/11 *Association Kokopelli v Graines Baumaux SAS* ECLI:EU:C:2012:447

Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie* ECLI:EU:C:2013:851

Case C-347/06 *ASM Brescia SpA v Comune di Rodengo Saiano*, ECLI:EU:C:2008:416

Case T-251/11 *Austria v Commission* ECLI:EU:T:2014:1060 Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439

C-176/90, *Aragonesa de Publicidad Exterior SA v Departamento de Sanidad y Seguridad Social de la Generalitat de Catalunya* ECLI:EU:C:1991:327

Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439

Case C-2/10 *Azienda Agro-Zootecnica Franchini Sari, Eolica di Atlamura Srl v Regione Puglia* ECLI:EU:C:2011:502

Case T-347/03 *Branco v Commission* ECLI:EU:T:2005:265

Joined Cases C-191/14 and C-192/14 *Borealis Polyolefine GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2016:311

Case 30/77 *R v Bouchereau* ECLI:EU:C:1977:172

Case T-131/16 *Belgium & Magnetrol International v Commission* ECLI:EU:T:2019:91

Case C-487/06 *British Aggregates Association v Commission and UK* ECLI:EU:C:2008:757

Case 72/83 *Campus Oil Ltd v Minister for Industry and Energy* ECLI:EU:C:1984:256

Opinion C-2/00 Cartagena Protocol ECLI:EU:C:2001:664

Case C-91/17 *Cellnex Telecom v Commission* ECLI:EU:C:2018:284

Case 16/74, *Centrafarm BV et Adriaan de Peijper v Winthrop B*, ECLI:EU:C:1974:115

Case C-203/96 *Chemische Afvalstoffen Dusseldorf BV and Others v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer* ECLI:EU:C:1998:316

Case C-313/90 *Comité International de la Rayonne et des Fibres Synthétiques v Commission* ECLI:EU:C:1993:111

Case C-71/09, C-73/09 & C-76/09 *Comitato "Venezia vuole vivere" & Others v Commission*, ECLI:EU:C:2011:386

Case C-320/03, *Commission v Austria* ECLI:EU:C:2005:684

Case C-205/06 *Commission v Austria* ECLI:EU:C:2009:118

Case C-524/07 *Commission v Austria* ECLI:EU:C:2008:717

Case C-304/88 *Commission v Belgium* ECLI:EU:C:1990:122

Case C-2/90 *Commission v Belgium* ECLI:EU:C:1992:310

Case C-281/01 *Commission v Council* (Energy Star) ECLI:EU:C:2002:761

Case 176/03 *Commission v Council* (Ship-Source Pollution) ECLI:EU:C:2005:542

Case C-91/05 *Commission v Council* ECLI:EU:C:2008:288

Case C-370/07 *Commission v Council*, ECLI:EU:C:2009:590

Case C-399/08, *Commission v Deutsche Post*, ECLI:EU:C:2010:481

Case C-302/86, *Commission v Denmark* ECLI:EU:C:1988:421

Case C-505/09 *Commission v Estonia* ECLI:EU:C:2012:179

Case C-118/07 *Commission v Finland* ECLI:EU:C:2009:715

Case C-68/76 *Commission v France* ECLI:EU:C:1977:48

Case C-265/95 *Commission v France* (Spanish Strawberries) ECLI:EU:C:1997:595

Case C-216/11 *Commission v France* ECLI:EU:C:2013:162

Case C-113/80 *Commission v Ireland* ECLI:EU:C:1981:139

Case C-45/87 *Commission v Ireland* (Dundalk Water) ECLI:EU:C:1988:435

Case C-235/91 *Commission v Ireland* ECLI:EU:C:1992:443

Case C-459/03 *Commission v Ireland* (MOX plant) ECLI:EU:C:2006:345

Case C-7/68 *Commission v Italy* (Re Art treasures 1) ECLI:EU:C:1968:51

Case C-24/68 *Commission v Italy* ECLI:EU:C:1969:29

; Case C-173/73 *Italy v Commission* ECLI:EU:C:1974:71

Case C-420/01 *Commission v Italy* ECLI:EU:C:2003:363

Case C-110/05 *Commission v Italy* ECLI:EU:C:2009:66

Case C-16/12 *Commission v Lithuania* ECLI:EU:C:2012:426

Case C-61/12 *Commission v Lithuania* ECLI:EU:C:2014:172

Case C-473/93 *Commission v Luxembourg* ECLI:EU:C:1996:263 Case C-157/94 *Commission v Netherlands* ECLI:EU:C:1997:499

Case C-279/08 *Commission v Netherlands* ECLI:EU:C:2011:551

Case C-596/13 *Commission v Moravia Gas Storage AS*. (previously Globula AS.) ECLI:EU:C:2015:203

Case C-504/09P *Commission v Poland* ECLI:EU:C:2012:178

Case C-639/11 *Commission v Poland* ECLI:EU:C:2014:173

Case C-62/98 *Commission v Portugal* ECLI:EU:C:2000:358

Case C-264/09 *Commission v Slovak Republic*, ECLI:EU:C:2011:580

Case C-106/09 *Commission & Spain v Gibraltar & UK*, ECLI:EU:C:2011:732

Case C-428/12 *Commission v Spain* ECLI:EU:C:2014:218

Case C-249/06 *Commission v Sweden* ECLI:EU:C:2009:119

Case C-124/81 *Commission v UK* (UHT milk) ECLI:EU:C:1983:30

Case 40/82 *Commission v UK* ECLI:EU:C:1984:33

Case C-188/07 *Commune de Mesquer v Total France SA and Total International Ltd* ECLI:EU:C:2008

Case C-62/79 *S.A. Compagnie Gdnral pour la Diffusion de la Tldvision v Cin6 Vog Films* ECLI:EU:C:1980:84

Case C-513/99 *Concordia Bus Finland Oy Ab v Helsingin kaupunki and HKL-Bussiliikenne* ECLI:EU:C:2002:495

Case 121/85 *Conegate Ltd v Commissioners of Customs and Excise* ECLI:EU:C:1986:114

Cases C-56/64 and C-58/64 *Consten S.à.R.L. and Grundig-Verkaufs-GmbH v Commission* ECLI:EU:C:1966:41

Case 6/64 *Costa v Ente Nazionale Energia Elettrica (Enel)* ECLI:EU:C:1964:66

Case C-31/17 *Cristal Union (legal successor) Sucrerie de Toury SA v Ministre de l'Économie et des Finances* ECLI:EU:C:2018:168

Case C-68/96 *Crundig Italiana SpA v Ministero delle Finanze*, ECLI:EU:C:1998:299

Case 231/83 *Cullet v Centre Leclerc* ECLI:EU:C:1985:29

Case C-324/99 *DaimlerChrysler AG v Land Baden-Württemberg* ECLI:EU:C:2001:682

Case C-15/83 *Denkavit Nederland v Hoofdproduktschap voor Akkerbouwprodukten* ECLI:EU:C:1984:183

Case T-351/02 *Deutsche Bahn v Commission* ECLI:EU:T:2006:104

Case C-78/70 *Deutsche Grammophon Gesellschaft mbH v Metro-SB-GrolmArkte GmbH & Co. KG* ECLI:EU:C:1971:59

Case T- 630/13 *DK Recycling und Roheisen v Commission* ECLI:EU:T:2014:833

Case 540/14 *DK Recycling und Roheisen GmbH v Commission* ECLI:EU:C:2016:469

Case C-295/14 *DOW Benelux BV v Staatssecretaris van Infrastructuur en Milieu*

Case C-349/17 *Eesti Pagar v Ettevõtlike Arendamise Sihtasutus*,ECLI:EU:C:2019:172

Case T-387/04, *EnBW Energie Baden-Württemberg v Commission* ECLI:EU:T:2007

Case C-242/10 *Enel Produzione SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2011:861

Case T-360/09 *E.ON Ruhrgas and E.ON v Commission* ECLI:EU:T:2012:332

Case C-275/13, *Elcogas SA v Adminstracion del Estado & Iberdrola SA*, ECLI:EU:C:2014:2314

Case C-206/06 *Essent Netwerk Noord BV v Nederlands Elektriciteit Administratiekantoor BV and Saranne BV* ECLI:EU:C:2008:413

C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2014

Joined Cases C-204/12 to C-208/12, *Essent Belgium NV v Vlaamse Reguleringsinstantie voor de Elektriciteits- en Gasmarkt* ECLI:EU:C:2013:294 Opinion of Advocate General Bot (2013)

Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

Case T-263/07 *Estonia v Commission* ECLI:EU:T:2009:351

Case T-694/14 *European Renewable Energies Federation v Commission* ECLI:EU:T:2015:915

Case C-448/01 *EVN AG and Wienstrom GmbH v Austria* ECLI:EU:C:2003:65

Case C-62/87 *Executif Regional Wallon & Glaverbel v Commission*, ECLI:EU:C:1988:132Case C-17/92 *Federación de Distribuidores Cinematográficos v Estado Español and Unión de Productores de Cine y Televisión* ECLI:EU:C:1993:172Joined Cases C-145/06 and C-146/06 *Fendt Italiana Srl v Agenzia Dogane - Ufficio Dogane di Trento* ECLI:EU:C:2007:411

Case C-482/99 *France v Commission* ECLI :EU:C:2002:294

Case C-244/03 *France v Parliament & Council* ECLI:EU:C:2005:299, para 14

Case C-265/08 *Federutility and others v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2010:205

Case C-150/16 *Fondul Proprietatea SA v Complexul Energetic Oltenia SA* ECLI:EU:C:2017:388

Case C-188/89 *Foster v British Gas plc* ECLI:EU:C:1990:313

Case C-171-11, *Fra.bo SpA v Deutsche Vereinigung des Gas- und Wasserfaches eV (DVGW) — Technisch-Wissenschaftlicher Verein*, ECLI:EU:C:2012:453

Case C-6/90 *Francovich and Bonifaci and others v Italian Republic* ECLI:EU:C:1991:428

Case C-459/10P *Freistaat Sachsen and Land Sachsen-Anhalt v Commission* ECLI:EU:C:2011:515

Case C-254/08 *Futura Immobiliare srl Hotel Futura v Comune di Casoria* ECLI:EU:C:2009:479

Case T-370/09 *GDF Suez v Commission* ECLI:EU:T:2012:333; Case T-196/06 *Edison v Commission* ECLI:EU:T:2011:281

Case C-393/92, *Gemeente Almelo v NV Energiebedrijf Ijsselmij* ECLI:EU:C:1994:171

Case C-288/96 *Germany v Commission* ECLI: EU:C:2000:537

Case C-156/98 *Germany v Commission* ECLI: EU:C:2000:467

Case C-239/01 *Germany v Commission* ECLI:EU:C:2003:514

Case T-47/15 *Germany v Commission*, ECLI:EU:T:2016:281

Case C-2/73 *Geddo v Ente Nazionale Rissi* ECLI:EU:C:1973:89

Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanala* ECLI:EU:C:2018:593

Case C-66/13 *Green Network SpA v Autorità per l'energia elettrica e il gas* ECLI:EU:C:2014:2399

Case C-90/94 *Haahr Petroleum v Åbenrå Havn, Ålborg Havn, Horsens Havn, Kastrup Havn NKE A/S, Næstved Havn, Odense Havn, Struer Havn and Vejle Havn, and Trafikministeriet*. ECLI:EU:C:1997:368

Case C-181/73 *Haegeman v Belgium* ECLI:EU:C:1974:41

Joined Cases C-43/13 and C-44/13 *Hauptzollamt Köln v Kronos Titan GmbH and Hauptzollamt Krefeld v Rhein-Ruhr Beschichtungs-Service GmbH*, ECLI:EU:C:2014:216

Case C-172/03, *Heiser*, ECLI:EU:C:2005:130

Case 34/79 *R v Henn and Darby* ECLI:EU:C:1979:295

Case C-53/96 *Hermès International v FHT Marketing Choice BV* ECLI:EU:C:1998:292

Case C-53/92 *Hilti v Commission* ECLI:EU:C:1994:77

Case C-292/92 *Hunermund v Landesapothekerkammer Baden-Württemberg* ECLI:EU:C:1993:932

Case C-465/15 *Hüttenwerke Krupp Mannesmann GmbH v Hauptzollamt Duisburg* , ECLI:EU:C:2017:640

Opinion of Advocate General Kokott delivered on 21 March 2013, Joined cases C-566/11, C-567/11, C-580/11, C-591/11, C-620/11 and C-640/11, *Iberdrola, SA and Others v Administración del Estado* ECLI:EU:C:2013:191

Case C-195/12 *IBV & Cie* ECLI:EU:C:2013:598

Case C-41/11 *Inter-Environnement Wallonie and Terre wallonne* ECLI:EU:C:2012:103

Cases C-51/71 to C-54/71 *International Fruit Company NV v Produktschap voor groenten en fruit* ECLI:EU:C:1971:128

Case C-323/82, *Intermills SA v Commission* ECLI:EU:C:1984:345

Case C-438/05 *International Transport Workers' Federation and Finnish Seamen's Union v Viking Line ABP and OÜ Viking Line Eest* ECLI:EU:C:2007:772

Case C-11/70 *Internationale Handelsgesellschaft mbH v Einfuhr- und Vorratsstelle für Getreide und Futtermittel*; ECLI:EU:C:1970:114

Joined Cases C-402 & C-415/05 *Yassin Abdullah Kadi and Al Barakaat International Foundation v Council and Commission* ECLI:EU:C:2008:461 Case C-108/09, *Ker-Optika bt v ÁNTSZ Dél-dunántúli Regionális Intézk* ECLI:EU:C:2010:725

Cases C-267/91 & C-268/91 *Keck and Mithouard* ECLI:EU:C:1993:905

Case C-5/14 *Kernkraftwerke Lippe-Ems GmbH v Hauptzollamt Osnabrück* ECLI:EU:C:2015:354

Case C-3/76 *Kramer* ECLI:EU:C:1976:114

Case 104/81 *Kupferberg v Hauptzollamt Mainz* ECLI:EU:C:1982:362, para 13

Case T-67/94, *Ladbroke Racing v Commission* ECLI:EU:T:1998:7

Case C- 209/09 *Lahti Energia Oy* ECLI:EU:C:2010:98

Case C-342/05 *Laval un Partneri Ltd v Svenska Byggnadsarbetareförbundet* ECLI:EU:C:2007:809 Case C-412/93 *Leclerc-Siplec* ECLI:EU:C:1994:393

Case C-294/83 *Les Verts v Parliament* ECLI:EU:C:1986:166, para

Case C-225 *Matra v Commission* ECLI:EU:C:1993:239

Case T-177/07 *Mediaset v Commission* ECLI:EU:T:2010:233

Case C-292/82 *Merck v Hauptzollamt Hamburg-Jonas* ECLI:EU:C:1983:335, para 12

Case C-9/56 *Meroni v High Authority* ECLI:EU:C:1958:7

Case T-670/14 *Milchindustrie-Verband v Commission* ECLI:EU:T:2015 :906

Case C-157/96 *R v Ministry of Agriculture Fisheries & Food ex parte NFU* ECLI:EU:C:1998:191

Case C-293/97 *R v Secretary of State for the Environment and Ministry of Agriculture, Fisheries and Food, exp Standley and Metson* ECLI:EU:C:1999:215

Case C-5/94 *R v Ministry of Agriculture Fisheries & Food, exp Hedley Lomas (Ireland) Ltd* ECLI:EU:C:1996:205

Case C-331/88 *R v Ministry of Agriculture Fisheries & Food, ex parte Fedesa* ECLI:EU:C:1990:391

Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2003:622

Case C-126/01 *Ministère de l'Économie, des Finances et de l'Industrie v GEMO* ECLI:EU:C:2002:273 - Opinion AG Jacobs

Case C-1/03 *Ministère public v Paul van de Walle* ECLI:EU:C:2004:67

Case C-222/04, *Ministero dell'Economia e delle Finanze v Cassa di Risparmio di Firenze SpA, Fondazione Cassa di Risparmio di San Miniato and Cassa di Risparmio di San Miniato SpA* ECLI:EU:C:2006:8

Case T-788/14 to 793/14 *MPF Holdings v Commission*, application lodged on 28 November 2014 (withdrawn on 28 February 2017)

Case C-253/00 *Antonio Muñoz y Cia SA and Superior Fruticola SA v Frumar Ltd and Redbridge Produce Marketing* ECLI:EU:C:2002:497

Case C-55/80 *Musik-Vertrieb Membran GmbH v Gesellschaft Fur Musikalische Aufführungs und Mechanische Vervielfältigungsrechte (GEMA)* ECLI:EU:C:1981:10

Case C-164/02 *Netherlands v Commission* ECLI:EU:C:2004:54

Case T-233/04 *Netherlands v Commission* ECLI:EU:T:2008:102

Case C-219/07 *Nationale Radd van Dierenwerkers en Liefhebber v Belgische Staat* ECLI:EU:C:2008:353

Case C-4/73 *J. Nold, Kohlen-und Baustoffgroßhandlung v Ruhrkohle Aktiengesellschaft* ECLI:EU:C:1975:114

Case T-115/94 *Opel Austria GmbH v Council* ECLI:EU:T:1997:3

Case T-385/12 *Orange v Commission*, ECLI:EU:T:2015:117

Case C-305/05 *Ordre des barreaux francophones et germanophone and Others v Conseil des Ministres* ECLI:EU:C:2007:383

Case C-213/96 *Outokumpu Oy* ECLI:EU:C:1998:155

Case C-379/92, *Re Paralta* ECLI:EU:C:1994:296

Case C-295/90 *Parliament v Council* ECLI:EU:C:1992:294

Case C-490/10 *Parliament v Council* ECLI:EU:C:2012:525

Case C-294/83, *Parti écologiste 'Les Verts' v European Parliament* ECLI:EU:C:1986:166, para 23

Cases C-180/98 to C-184/98, *Pavlov v Stichting Pensioenfonds Medische Specialisten* ECLI:EU:C:2000:428

Case C-345/02 *Pearle BV, Hans Prijs Optiek Franchise BV and Rinck Opticiëns BV v Hoofdbedrijfschap Ambachten* ECLI:EU:C:2004:448

Case 730/79 *Phillip Morris Holland BV v Commission* ECLI:EU:C:1980:209

Case C-201/08 *Plantanol GmbH & Co. KG v Hauptzollamt Darmstadt*, ECLI:EU:C:2009:539

Case C-43/71 *Politi s.a.s. v Italian Ministry for Finance* ECLI:EU:C:1971:122

Case T-183/07 *Poland v Commission* ECLI:EU:T:2009:350

Case T-370/11 *Poland v Commission*, ECLI:EU:T:2013:113

Case 148/78 *Pubblico Ministero v Ratti* ECLI:EU:C:1979:110

Case C-379/98 *PreussenElektra AG v Schleswig AG, in the presence of Windpark Reußenköge GmbH & Land Schleswig-Holstein* ECLI:EU:C:2001:160

Case C-8/74, *Procureur du Roi v Dassonville* ECLI:EU:C:1974:82

Case C-53/76 *Procureur de la République de Vesancon v Les Sieurs Bouhelier* ECLI:EU:C:1977:17

Case 240/83 *Procureur de la République de Vesancon v Association de Défense des Brûleurs d'Huiles Usagées* ECLI:EU:C:1985:59

Case C-564/14 *Raffinerie Heide GmbH v Commission* ECLI:EU:C:2016:685

Case C-378/08 *Raffinerie Mediterranée (ERG) SpA, Polimeri Europa SpA and Syndial SpA v Ministero dello Sviluppo economico and Others* ECLI:EU:C:2010:126

Case C-120/78, *REWE-Zentrale AG v Bundesmonopolverwaltung für Branntwein (Cassis de Dijon)* ECLI:EU:C:1979:42

Case C-37/83 *Rewe-Zentral AG v Direktor der Landwirtschaftskammer Rheinland* ECLI:EU:C:1984:89

Case C-565/14 *Romonta v Commission* ECLI:EU:C:2016:698

Case C-418/14 *ROZ-ŚWIT Zakład Produkcyjno-Handlowo-Usługowy Henryk Czurko, Adam Pawłowski spółka jawna v Dyrektor Izby Celnej we Wrocławiu*, ECLI:EU:C:2016:400

Case C-92/11 *RWE Vertrieb AG v Verbraucherzentrale Nordrhein-Westfalen eV*, ECLI:EU:C:2013:180

Case C-239/09 *Seydaland Vereinnigte Agrabetriebe v BVVG Bodenverwertungs-undverwaltungs* ECLI:EU:C:2010:778

Case C-39/94 *SFEI v La Poste* ECLI:EU:C:1996:285

Case T-459/93 *Siemens v Commission* ECLI:EU:T:1995:100

Case 72/91 & 73/91 *Sloman Neptun* ECLI:EU:C:1993:97

Case C-284/16 *Slowakische Republik v Achmea BV* ECLI:EU:C:2018:158

Case C-412/93, *Société d'Importation Edouard Leclerc-Siplec v TFI Publicité & M6 Publicité* ECLI:EU:C:1995:26

Case 56/65 *Société Technique Minière v Société Maschinenbau Ulm GmbH* ECLI:EU:C:1966:38

Case C-342/ 96 *Spain v Commission*, ECLI:EU:C:1999:210

Cases C-278/92 to 280/92 *Spain v Commission* ECLI:EU:C:1994:325

Case C-351/98 *Spain v Commission* ECLI:EU:C:2002:530

Joined Cases C-105/12 to C-107/12 *Staat der Nederlanden v Essent NV, Essent Nederland BV, Eneco Holding NV and Delta NV*, ECLI:EU:C:2013:677

Case C-221/06 *Stadtgemeinde Frohnleiten and Gemeindebetriebe Frohnleiten GmbH v Bundesminister für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft* ECLI:EU:C:2007:65

Case C-30/59 *Steenkolenmijnem v High Authority* ECLI:EU:C:1961:2

Case 78/76 *Steinike & Weinlig v Germany* ECLI:EU:C:1977:52

Case T-793/14 *Tempus Energy and Tempus Energy Technology v Commission* ECLI:EU:T:2018:790

Case C-7/78 *R v Thompson, Johnson and Woodiwiss* ECLI:EU:C:1978:209

Case C-270/12 *UK v Parliament & Council* ECLI:EU:C:2014:18

Case C-82/77 *Van Tiggele*, ECLI:EU:C:1978:10

Case C-1/03 *Van de Walle* ECLI:EU:C:2004:490

Case C-17/03 *Vereniging voor Energie, Milieu en Water and Others (VEMW) v Directeur van de Dienst uitvoering en toezicht energie*, ECLI:EU:C:2005:362

Case C-261/81 *Walter Rau Lebensmittelwerke v De Smedt* ECLI:EU:C:1982

Case C-266/16 *Western Sahara Campaign UK v Commissioners for Her Majesty's Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs* ECLI:EU:C:2018:118

Miscellaneous Cases

R (on the application of ClientEarth) (Appellant) v Secretary of State for the Environment, Food and Rural Affairs (Respondent) [2015] UKSC 28 – following a preliminary reference to the CJEU Case C-404/13 *R (on the application of ClientEarth) v The Secretary of State for the Environment, Food and Rural Affairs* ECLI:EU:C:2013:805

Arbitration 062/2012, *Charanne B.V. & Construction Investments S.A.R.L v Kingdom of Spain* (January 2016) Available At http://www.italaw.com/sites/default/files/case-documents/italaw7097_0.pdf

Decision 10/2015, *Scat Punti Vendita Spa v Agenzia delle entrate - Direzione provinciale di Reggio Emilia*, (October 2015) <http://www1.agenziaentrate.gov.it/english/>

Department of Energy & Climate Change v Breyer Group PLC & Others, [2015] EWCA Civ 408

Dispute Settlement and Sanctions Committee (CoRDIS) of French Energy Regulator fined VITOL S.A. €5 million for engaging in 'market manipulation' between 1 June 2013 and 31 March 2014 via the REMIT Regulations, (9 October 2018) – available at <https://www.cre.fr/en/News/The-Dispute-Settlement-and-Sanctions-Committee-CoRDIS-imposes-a-penalty-for-market-manipulations-on-the-wholesale-energy-market> accessed 15 October 2018

EDE International v Hungary UNCITRAL, PCA, Award of 4 December 2014 available at <http://www.iareporter.com/articles/investigation-in-recent-briefs-europeancommission-casts-doubt-on-application-of-energy-charter-treaty-to-any-intra-eudispute/> accessed 10 March 2019

Eiser Infrastructure Limited and Energía Solar Luxembourg SARL v Kingdom of Spain, ICSID Case No. ARB/13/36

Electrabel SA v Republic of Hungary International Center for Settlement of Investment Disputes Case No. ARB/07/19, Decision on Jurisdiction, Applicable Law and Liability, 30 November 2012, paras 27-34

Ioan Micula v Romania, International Center for Settlement of Investment Disputes Case No. ARB/05/20

LCW Europe Investments Limited v Czech Republic, PCA Case No. 2014-22, registered 8 May 2013

WTO Panel Report, Indonesia Certain Measures Affecting the Automobile Industry, WT/DS54/R, WT/DS59/R, WT/DS64/R, adopted on 23 July 1998, at note 649

Peak Gen Top Co Ltd & Ors, R (on the application of) v The Gas And Electricity Markets Authority & Anor, Court of Appeal - Administrative Court, June 22, 2018, [2018] EWHC 1583 (Admin)

Photovoltaic KnopfBetriebs-GmbH v Czech Republic, PCA, registered 8 May 2013

Pulp Mills on the River Uruguay, Argentina v Uruguay, International Court of Justice (2006) Rep 113

Public Employees for Environmental Responsibility v U.S. Environmental Protection Agency – 5 June 2018 Civil Action No. 17-652

Trail Smelter Arbitration (*United States v Canada*) Arbitral Tribunal 3 UN Report of International Arbitration Awards 1905 (1941)

Case C/09/456689 - *Urgenda Foundation v Government of the Netherlands* (June 2015), Available at <https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2015:7196&keyword=urgenda> (accessed 3 February 2017)

Vattenfall v Germany International Center for Settlement of Investment Disputes Case No. Arb/09/06, 11 March 2011

Voltaic Network GmbH v Czech Republic, PCA Case No. 2014-20, registered 8 May 2013

WA Investments Europa Nova Limited v Czech Republic, PCA Case No. 2014-19, registered 8 May 2013

EU Commission Decisions

Commission Decision 1999/227/ECSC Georgsmarienhütte OJ L83/72

Commission Decision 1999/653, 'Denmark - CO2-quota system' OJ C 322

Commission Decision 2000/550, 'Belgium, Green Electricity Certificates' OJ C 330

Commission Decision, state aid NN 27/2000 - Germany, Act on granting priority to renewable energy sources, in force since 1 April 2000, OJ C 164, 10 July 2002; NN 68/2000 - Germany, Law on the protection of electricity generated from combined heat and power, OJ C 164

Commission Decision, state aid NN/30/B/2000 - The Netherlands, Zero tariff for green electricity, OJ C 30

Commission Decision, state aid C 31/2000 - Belgium, Transitory Regime of the electricity market, OJ C 222,

Commission Decision 2001/416, United Kingdom - Emission trading scheme OJ C 88

Commission Decision, state aid NN 49/99 -Spain, 25 July 2001, SG (2001) D/290553

Commission Decision, state aid NN/30/B/2000 - The Netherlands, Zero tariff for green electricity, OJ C 30, 2 February 2002

Commission Decision, state aid N 239/2001 The Netherlands, Partial Exemption of the energy tax for waste incineration units, OJ C 32

Commission Decision, state aid N 74/C/2002 - Finland, Aid to power plants, OJ C 148, 25 June 2003

Commission Decision, state aid N 175a/2005 - Germany, Support of demonstration projects for use of energy from renewable sources, OJ C 89, 12 April 2006

Commission Decision, state aid N 56/2006 - United Kingdom, climate change levy rebate extension

Commission Decision, state aid N391/2006 - Denmark, Tax rate reductions: heat produced in CHPs, heat produced by electricity and process heat

Commission, state aid N 907/2006 - Hungary, Aid to Mitrai Eromu Zrt - MSF 2002

Commission Decision, state aid N394/2007 - Denmark, non-appliance to wind power plants of lower depreciation rate

Commission, Decision N 567/2007 - Denmark, Modification of electricity production grant,

Commission Decision 1181/2007 'concerning state aid granted by Slovenia in the framework of its legislation concerning qualified energy producers'

Commission Decision (2008) SA.26036 Aid to energy intensive businesses in Austria, Green Electricity Act (Ökostromgesetznovelle 2008)

Commission Decision (2009) 409 23 April 2009 Reduction in carbon emissions to meet the Community's carbon emission reduction commitments up to 2020' (Effort Sharing Decision) OJ L 40/136

Commission Decision (2011) 278/EU determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament of the Council OJ 2011 L 130

Commission Decision (2013) state aid SA.33384 Green Electricity Act 2012, Austria

Commission Decision (2013) concerning aid for all forms of biogas use in Denmark, SA.35485

Commission, Decision (2013) 269 'State aid SA34947 (2013/C) (ex 2013/N)-United Kingdom, Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station'

Commission Decision (2014) 200/01 'Guidelines on State aid for environmental protection and energy 2014-2020'

Commission, Decision (2014) concerning Electricity Market Reform, Contract for Difference for Renewables in the United Kingdom, SA.36196

Commission Decision (2014) concerning aid to photovoltaic installations and other renewable energy installations in Denmark, SA.36204

Commission Decision (2014) concerning Support for five offshore wind farms: Walney, Dudgeon, Hornsea, Burbo Bank and Beatrice in the United Kingdom, SA.38758, SA.38759, SA.38761, SA.38763 & SA.388121

Commission Decision (2015) 1470 OJ L232/43 of 4 April 2015. Appeals against this decision are pending Cases T-624/15 *European Food v Commission*, T-694/15 *Micula v Commission* and T-704/15 *Micula v Commission*

Commission, Decision (2015) concerning State aid SA.38762 (2014/N)-United Kingdom, Investment Contract for Lynemouth Power Station Biomass Conversion, C/i 16/2015, 52

Commission Decision 2015/1585, Aid Scheme SA 33995 –'implemented by Germany for the support of renewable electricity and of energy-intensive users'

Commission Decision (2015) 201/5 -Germany, Support to 20 large offshore wind farms under the EEG Act 2014 : state aid SA.39723, SA.39724, SA.39725, SA.39726, SA.39731, SA.39732, SA.39733, SA.39735, SA.39738, SA.39739, SA.39741, SA.39742 (2014/N); SA.39722, SA.39727, SA.39728, SA.39729, SA.39730, SA.39734, SA.39736, SA.39740 (2015/NN)

Commission Decision 2017 SA 38631 Reduced surcharge for self-generation under EEG 2017

Commission Decision 2018 SA.45461 EEG 2017 - Reform of the Renewable Energy Law

Commission Decision 2018 SA 49416 'relating to reductions in the offshore surcharge for electro-intensive undertakings and reductions on the CHP surcharge for electricity produced from waste gases in Germany'

Commission Decision 2018 SA 50395 'relating to the offshore-surcharge reduction for railway undertakings in Germany'

EU Institutions Communication (Commission, ACER & Others)

ACER/CEER - Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2016

Barón-Escámez S, Sylvia Ferretti, Juliana Frendo, Octavien Ginalska, Maciej Górka, Hans Ingels, Christos Kyriatzis, Florian Schmidt, Carolina Stege, Laura Stočkutė and Yiannos Tolia 'Free movement of goods: Guide to the application of Treaty provisions governing the free movement of goods' [2010] EU Directorate General for Enterprise and Industry . http://ec.europa.eu/enterprise/policies/single-market-goods/files/goods/docs/art34-36/new_guide_en.pdf accessed 29 August 2016, 29-30

COCL 5 17271/1/08 'Presidency Conclusions of the Brussels European Council (11 and 12 December 2008)'

EU COM (1973) 'Programme of Action of the European Communities on the Environment', OJ 112

EU COM (1994) 659 'Green Paper for a European Union energy policy'

EU COM (2000) 1 'on the precautionary principle'

EU COM (2000) 769 'Towards a European Strategy for the Security of Energy Supply' defines energy security as 'The uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development'

EU COM (2001), 'Commission gives Green light to "stranded costs" compensation by Spain, Austria and The Netherlands', Press Release, Brussels, 25 July 2001, IP/01/1 079

EU Com (2005) 627, 'The Support of Electricity from Renewable Energy Sources'

EU COM (2006) 'The Energy community Legal Framework 2018' 4th Edition OJ L198

EU COM (2007) 2 'Limiting Global Climate Change to 2 degrees Celsius The way ahead for 2020 and beyond'

EU COM (2007) 35 – 'Package on the internal market of goods'

EU COM (2008) 30, '2020 by 2020 Europe's Climate Change Opportunity'

EU COM (2009) 519 'Investing in the Development of Low Carbon Technologies'

EU COM (2010) 639, 'Energy 2020 - A strategy for competitive, sustainable and secure energy'

EU COM (2011) 112: 'A Roadmap for moving to a competitive low carbon economy in 2050'

EU COM (2011) 131 'Review of European and National Financing of Renewable Energy in Accordance With Article 23(7) of Directive 2009/28'

EU COM (2012) C158/4, 'Guidelines on Certain state aid Measures in the Context of the Carbon Emission Allowance Trading Scheme Post 2012'

EU COMn (2012) C 8/02, 'State aid rules to compensation granted for the provision of services of general economic interest' OJ C8/4

EU COM (2013) 169 Green Paper 'A 2030 framework for climate and energy policies'

EU COM (2013) 439 'Delivering the internal market in electricity and making the most of public intervention'

EU COM (2014) 01 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020' OJ 200/01

EU COM (2014) 15 'A policy framework for climate and energy in the period from 2020 up to 2030'

EU COM (2014) 255 '2030 Energy Efficiency Impact Assessment'

EU COM (2014) 330 'European Energy Security Strategy'

EU COM(2015) 'The European Union Leading In Renewables'

EU COM (2015) 80 'A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy'

EU COM (2015) 439 'guidance for the design of renewables support schemes'

EU COM (2015) 572 'State of the Energy Union 2015'

EU COM (2016) 482 'on binding annual carbon emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement'

EU COM (2016) 860 30 November 2016 'Clean Energy For All Europeans'

EU COM (2016) 405 'Impact Assessment for the amendment of the Energy Efficiency Directive'

EU COM (2016) 418 'Impact Assessment for the recast of the Renewables Directive'

EU COM (2016) 615 'Better Regulation: Delivering better results for a stronger Union'

EU COM (2017) 'Analysis of the use of Auction Revenues by the member states'

EU COM (2017) 56 '2016 assessment of the progress made by Member States in 2014 towards the national energy efficiency targets for 2020 and towards the implementation of the Energy Efficiency Directive 2012/27/EU'

EU COM (2008) 18, 'Report on the amending proposal for Carbon Capture and Storage Directive'

EU COM (2018) 28 'A European Strategy for Plastics in a Circular Economy'

EU COM (2018) 29 'on a monitoring framework for the circular economy'

EU COM (2018/C 95/06) of the impending expiry of certain anti-dumping measures related to Crystalline silicon photovoltaic modules and key component OJ C 95/6

EU COM (2018) 482 'Annual Report on Competition Policy 2017' - The Annual Report and the Staff Working Paper can be accessed at: http://ec.europa.eu/competition/publications/annual_report/index.html

EU COM 'Europe in 12 lessons' available at <https://publications.europa.eu/en/publication-detail/-/publication/009305e8-2a43-11e7-ab65-01aa75ed71a1>

EU COM 'EU in Brief', https://europa.eu/european-union/about-eu/eu-in-brief_en accessed 25 July 2017

EU Commissions's Consultation on the future Renewable Energy Directive' <https://ec.europa.eu/energy/en/consultations/preparation-new-renewable-energy-directive-period-after-2020>, accessed 7 July 2018

EU Commission Memo 14/276 (2014) – Requiring New Renewable Facilities to bid for a support scheme contract

EU Commission, 'EU energy in figures, Statistical Pocketbook'

European Commission's proposals on Clean Energy available from https://acer.europa.eu/Media/News/Pages/European-Energy-Regulators_Overview-Paper-Initial-Reactions-to-the-European-Commission_s-proposals-on-Clean-Energy.aspx

EU Commission P/18/2122 Commission Investigation TenneT TSO GmbH's – 19 March 2018 available at http://europa.eu/rapid/press-release_IP-18-2122_en.htm accessed 4 April 2018

EU Commission IP/10/425 Commission Decision Transmission Capacity from Svenska Kraftnät for Sweden – 14 April 2010 available at http://europa.eu/rapid/press-release_IP-10-425_en.htm#top-page accessed 4 April 2018

Council of European Energy Regulators, 'Implications of Non-harmonised Renewable Support Schemes A CEER Conclusions Paper' (2012) C12-SDE-25-04b, 13

IP/18/2122 Commission Investigation TenneT TSO GmbH's – 19 March 2018 available at http://europa.eu/rapid/press-release_IP-18-2122_en.htm accessed 4 April 2018

Cañete M-A (EU Commissioner for Climate Action & Energy). 'The European Union Leading In Renewables' Speech - available at http://europa.eu/rapid/press-release_SPEECH-18-5909_en.htm accessed 2 July 2018

Klessmann C, Erika de Visser, Fabian Wigand, Malte Gephart, Gustav Resch and Sebastian Busch, 'Cooperation between EU Member States under the RES Directive. Task 1 Report (2014)', available at http://ec.europa.eu/energy/renewables/studies/doc/2014_design_features_of_support_schemes_task1.pdf

EU Neighbourhood information Centre, 'The Mediterranean Solar Plan', 2010 available at www.enpi-infor.eu/files/interview/Mediterranean%20Solar%20Plan.pdf accessed 15 September 2015

EU Commission's state aid Scoreboard, available at: http://ec.europa.eu/eurostat/tgmcomp/refreshTableAction.do?tab-table&plugin=1&pcode-comp-sa_01&language=en, accessed 22 March 2018

EU Parliament resolution of 15 December 2010 on the situation of fundamental rights in the European Union (2009) – effective implementation after the entry into force of the Treaty of Lisbon (2009/2161(INI)) 2012/C 169 E/07 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1551216984520&uri=CELEX:52010IP0483> – accessed 1 October 2018

Books

Arlinghaus J, Luisa Dressler, Florans Flues, Michelle Harding and Kurt van Dender *Effective Carbon Rates Pricing CO₂ through Taxes and Emissions Trading Systems* (OECD Publishing, 2016), 15

Aust A *Modern Treaty Law and Practice* (Cambridge University Press, 2007)

Bachman R and Russell Schutt *The Practice of Research in Criminology and Criminal Justice* (Sage, 2007)

Bailey I *New Environmental Policy Instruments in the European Union Politics, Economics, and the Implementation of the Packaging Waste Directive* (Taylor & Francis, 2003)

Baker S Maria Kousis, Dick Richardson and Ivor Gaber, Routledge, *The Politics of Sustainable Development: Theory, Politics and Practice within the European Union* (Routledge 1997)

Barcelona R *Energy Investments: An Adaptive Approach to Profiting from Uncertainties* (Palgrave Macmillan, 2017)

Barrett S *Environment and Statecraft: The Strategy of Environmental Treaty-Making* (Oxford University Press, 2003)

Baldwin R Martin Cave and Martin Lodge *Understanding Regulation: Theory, Strategy and Practice* (2nd ed. Oxford University Press, 2011) Barnard C *The Substantive Law of the EU: The Four Freedoms*, (4th edn Oxford, 2013)

Barnard C and Steve Peers *European Union Law* (Oxford University Press, 2014)

Bastable C *The Commerce of Nations* (Wentworth Press, 2016)

Beardsworth A and Teresa Keil, 'The vegetarian option: varieties, conversions, motives and careers' (1992) 40(2) *The Sociological Review*, 253

Beck G *The Legal Reasoning of the Court of Justice of the EU* (Hart Publishing, 2013), 287

Bernard N, 'Flexibility in the European Single Market' in Catherine Barnard and Joanne Scott (eds), *The Law of the Single European Market: Unpacking the Premises* (Hart Publishing, 2002)

Birks M and Jane Mills *Grounded Theory: A Practical Guide* (2nd edn. Sage, 2015)

Birnie P, Alan Boyle, and Catherine Redgwell, *International Law and the Environment* (3rd Ed, Oxford University Press, 2009) Blix H and J H Emerson, *The Treaty Maker's Handbook* (1973)

Bloor M and Fiona Wood, *Keywords in Qualitative Methods: A Vocabulary of Research Concepts* (1st edn, SAGE, 2006)

Bodansky D *The Art and Craft of International Environmental Law* (Harvard University Press, 2010)

Bodansky D, Jutta Brunnée, and Lavanya Rajamani *International Climate Change Law* (Oxford University Press, 2017)

Bogojević S *EU Climate Change Litigation, the Role of the European Courts, and the Importance of Legal Culture* (Wiley, 2013), 50

von Bogdandy A and J Bast, *Principles of European Constitutional Law* (Hart Publishing, 2nd Edition, 2009)

Brinkmann S and Steinar Kvale *Interviews: An Introduction to Qualitative Research Interviewing* (3rd ed SAGE, 2015)

Braun V and Victoria Clarke, 'Using thematic analysis in psychology' (2006) 3(2) *Qualitative Research in Psychology*, 77; David Silverman *Interpreting Qualitative Data* (SAGE, 2014)

Brewer J and Albert Hunter *Foundations of Multimethod Research: Synthesizing Styles* (Sage, 2006):

- Bryman A *Social Research Methods* (Oxford University Press, 2012)
- Burnham P, Karin Gill Lutz, Wyn Grant and Zig Layton-Henry *Elite Interviewing* (Palgrave Macmillan, 2008)
- van Calster G *International and EC trade law - The environmental challenge* (Cameron May, 2000) Cane P and Herbert Kritzer *The Oxford Handbook of Empirical Legal Research* (Oxford University Press, 2010)
- Carmalt S *The Economics of Oil: A primer including, geology, economics, energy, politics* (Springer, 2017)
- Coe J and Donald Rogers *Marine debris: sources, impacts, and solutions* (Springer, 2012);
- Coop G and Bernhard Maier 'The External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds.), *Legal Aspects of EU Energy Regulation*, (2nd ed, Oxford University Press, 2016), 80
- Craig P and G de Burca, *EU Law, Text, Cases and Materials* (6th Edition, Oxford University Press, 2015)
- Creswell J *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed Sage, 2014);
- Cross E, *Electric Utility Regulation in the European Union* (Wiley, 1996)
- van Damme I *Treaty Interpretation by the WTO Appellate Body* (Oxford University Press, 2007)
- Dannecker L *Energy Time Series Forecasting Efficient and Accurate Forecasting of Evolving Time Series from the Energy Domain* (Springer, 2015) 11
- Denzin N and Yvonna Lincoln *Handbook of Qualitative Research* (5th edn, Sage, 2018)
- Depledge J *The Organization of Global Negotiations: Constructing the Climate Change Regime* (Earthscan, 2015)
- Dixit A and Robert Pindyck *Investment under Uncertainty* (Princeton University Press, 1994)
- Donovan C, *Renewable energy finance: powering the future*, (Imperial College Press, 2015)
- Driesen D, Robert Adler and Kirstin Engel *Environmental Law: Conceptual and Pragmatic Approach* (Aspen, 2011), 267
- Dworkin R *Taking Rights Seriously* (Bloomsbury, 2013), 22
- Dworkin R *Law's Empire* (Harvard University Press, 1987)
- Egenhofer C, *Integrating Security of Supply, Market Liberalization and Climate Change Appearing in Michael Emerson, Readings in European Security*, (Vol 4 Centre for European Policy Studies, 2007)
- Driesen D, Robert Adler and Kirstin Engel *Environmental Law: Conceptual and Pragmatic Approach* (Aspen, 2011), 267
- Ellerman D, Frank Convery and Christian de Perthuis, *Pricing Carbon: The European Union Emissions Trading Scheme* (Cambridge University Press, 2010)
- Eyre S and M G Pollitt, *Competition & Regulation in Electricity Markets* (Elgar, 2016)
- Franck T *The Power of Legitimacy Among Nations* (Oxford University Press, 1993)
- Friend C *Social Contract Theory* (International Encyclopedia of Philosophy, 2004)
- Fuller L *The Morality of Law* (Yale University Press, 1969)
- Gardiner R *Treaty Interpretation* (Oxford University Press, 2008)
- Gardiner S, Simon Caney and Dale Jamieson *Climate Ethics: Essential Readings* (Oxford University Press, 2010)
- Gerber D *Law & Competition in the Twentieth Century: Protecting Prometheus* (Clarendon Press, 1998)
- Ghuri A *Interaction and conflict of treaties in investment arbitration* (Wolters Kluwer, 2015)
- Given L *100 Questions (and Answers) About Qualitative Research* (Sage, 2016)
- von Glahn G and James Taulbee *Law Among Nations: An Introduction to Public International Law* (Routledge, 2017)
- Glaser B and Anselm Strauss *Discovery of Grounded Theory Strategies for Qualitative Research* (Routledge, 1967) Graveson R *Conflict of Laws: Private International Law* (Sweet and Maxwell, 1974)
- Goebel R, Eleanor Fox, George Bermann, Jeffery Atik, Frank Emmert and Damien Gerard *Cases and Materials on European Union Law* 4th Edition (West Academic, 2016)
- Gordon R *The Evolution of Energy Policy in Western Europe: the Reluctant Retreat From Coal* (Praeger Publishers, 1970);
- Gore A, *The Future: Six Drivers of Global Change* (Random House 2013)
- Gough J *The Social Contract* (Clarendon Press, 1936)
- Greer M *Electricity Cost Modelling Calculations* (Elsevier, 2010)
- Grubb M and Karsten Neuhoff, *Emissions Trading & Competitiveness*, (Taylor & Francis, 2006) Guest G, Kathleen MacQueen and Emily Namey *Applied Thematic Analysis* (SAGE, 2012), 52

- Gunningham N and Darren Sinclair *Leaders and Laggards: Next Generation Environmental Regulation* (Greenleaf Publishing, 2002)
- Haghighi S, *Energy Security: The External Relations of the European Union with Major Oil and Gas Supplying Countries* (Hart, 2007)
- Hair J, Arthur Money, Phillip Samouel and Mike Page *Research Methods for Business* (Wiley, 2007), 295
- Hammersley M and Paul Atkinson *Ethnography: Principles in Practice* (3rd ed, Routledge, 2007) Hart H L A *The Concept of Law* (ed) Penelope Bulloch and Joseph Raz (Clarendon Press, 1994)
- van Harten G, *Sovereign Choices and Sovereign Constraints: Judicial Restraint in Investment Treaty Arbitration* (Oxford University Press, 2013)
- Hatzopoulos V *Regulating Services in the European Union* (Oxford University Press, 2012), 325
- Hedemann-Robinson M, *Cement of European Union Environmental Law – Legal Issues and Challenges* (Routledge, 2007)
- Heffron R *Energy Law: An Introduction* (Springer, 2014)
- Hoffman S *The Law and Business of International Project Finance: A Resource for Governments, Sponsors, Lawyers, and Project Participants* (Cambridge University Press, 2008)
- Holden E, Kristin Linnerud, David Banister, Valeria Jana Schwanitz and August Wierling *The Imperatives of Sustainable Development: Needs, Justice, Limits* (Routledge, 2017)
- Jacobs D *Renewable Energy Policy Convergence in the EU The Evolution of Feed-in Tariffs in Germany, Spain and France* (Taylor & Francis, 2012)
- Jaklic K *Constitutional Pluralism in the EU* (Oxford University Press, 2014) Jans J and Hans Vedder. *European Environmental Law*, (4th Ed Europa Law Publisher, 2011), 32
- Johnston A and Guy Block, *EU Energy Law*, (1st edn. Oxford University Press, 2012), 309
- Jephcott M, *Law of Cartels* (Jordan Publishing, 2011)
- Jowett B *The Dialogues of Plato: The Laws* (vol. 4 Clarendon Press, 1953), 485
- Hans Kelsen *General Theory of Law and State* (Russell and Russell, 1945)
- Kelsen H *Principles of International Law* (Rinehart, 2003), 201
- King N, 'Using templates in the thematic analysis of text', in Catherine Cassell and Gillian Symon (eds.), *Essential guide to qualitative methods in organizational research* (SAGE, 2004), 427
- Kramer L *EU Environmental Law* (7th Edition, Sweet & Maxwell, 2012)
- Laffranque J, *The Interface Between European Union Energy, Environmental & Competition Law* (FIDE Congress 2012)
- Laursen F, *The Treaty of Nice: Actor Preferences, Bargaining and Institutional Choice* (Martinus Nijhoff, 2005), 393
- Lee M, *EU Environmental Law, Governance & Decision-Making* (Hart, 2014)
- Lelieveldt H and Sebastiaan Princen *The Politics of the European Union* (Cambridge University Press, 2011), 271
- Mallon K, *Renewable Energy Policy and Politics: A Handbook for Decision-Making* (Earthscan, 2006)
- Martinico G *The Tangled Complexity of the EU Constitutional Process: The Frustrating Knot of Europe* (Routledge, 2013)
- Maxian Rusche T, *EU Renewable Electricity Law and Policy: From National Targets to a Common Market* (Cambridge University Press, 2015)
- Mazer A *Electric Power Planning for Regulated and Deregulated Markets* (Wiley, 2006)
- McCormick J, *Environmental Policy in the European Union* (Palgrave 2001)
- McManus P *Environmental Regulation* (Elsevier, 2009)
- Miles M and Michael Huberman *Qualitative Data Analysis* (SAGE, 1994)
- Molle W, *The Economics of European Integration: Theory, practice, policy* (Ashgate, 2006)
- Nazzini R *Foundations of European Competition Law: The Objective & Principles of Article 102* (Oxford University Press, 2011), 108
- Nordhaus W *The Climate Casino: Risk Uncertainty and Economics of a Warming World* (Yale University Press, 2013)
- Nugent N and Mark Rhinard *The European Commission* (Palgrave Macmillan, 2105)
- Nuttall W J, *Nuclear Renaissance: Technologies and Policies for the Future of Nuclear Power* (CRC Press, 2004), 42
- Oliver P, *Free Movement of Goods in the European Community* (Hart Publishing 2003)

- Page E *Ethics of Emissions Trading* (Wiley, 2013)
- Patton M *Qualitative Research and Evaluation Methods* (3rd edn, Sage, 2002), 45
- Pauwelyn J, *Conflict of Norms in Public International Law* (Cambridge University Press 2003)
- Pellerin-Carlin T, Jean-Arnold Vinois, Eulalia Rubio, Sofia Fernandes *Making the Energy Transition a European Success tackling the Democratic Innovation, Financing and Social Challenges of the Energy Union* (Jacques Delors Institute, 2017)
- Pérez A T *Conflicts of Rights in the European Union. A Theory of Supranational Adjudication* (Oxford University Press, 2010)
- Pulkowski D *The Law and Politics of International Regime Conflict* (Oxford University Press, 2014)
- Quigley C and Anthony Collins *EC state aid Law and Policy* (2nd Ed Hart, 2009)
- Rackley S *Carbon capture and storage* (Butterworth-Heinemann, 2017)
- Raymond L *Private Rights in Public Resources Equity and Property Allocation in Market-Based Environmental Policy* (Routledge, 2014)
- Raz J *Practical Reason and Norms* (Princeton University Press, 1975), 152-154
- Roehrkasten S, *Global Governance on Renewable Energy: Contrasting the Ideas of the German and Brazilian Governments* (Springer, 2015)
- Rosas A and Lorna Armati *EU Constitutional Law: An Introduction* (Hart Publishing, 2012)
- de Sadeleer N, *Environmental Principles. From Political Slogans to Legal Rules* (Oxford University Press, 2002)
- de Sadeleer N, *EU Environmental Law and the Internal Market* (Oxford University Press, 2014)
- Saldaña J *The Coding Manual for Qualitative Researchers* (3rd ed SAGE, 2015)
- Sandelowski M, 'Using qualitative research' (2004) 14 *Qualitative Health Research*, 1366
- Sands P and Paolo Galizzi *Documents in European Community Environmental Law* (Cambridge University Press, 2006)
- Sarantakos S *Social Research* (Palgrave Macmillan, 2005)
- Schavemaker P and Lou van der Sluis *Electrical Power System Essentials* (Wiley, 2016), 261
- Schonberg S, *Legitimate Expectation in Administrative Law* (Oxford University Press, 2000)
- Schütze R *European Constitutional Law* (Cambridge University Press, 2012)
- Schweppe F, Michael Caramanis, Richard Tabors and Roger Bohn *Spot Pricing of Electricity* (Springer, 1988)
- Silverman D *Interpreting Qualitative Data* (SAGE, 2014)
- Snow D, Leon Anderson, John Lofland and Lyn Lofland *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis* (4th Ed Wadsworth, 2005)
- Spencer L, Jane Ritchie, Jane Lewis and Lucy Dillon, 'Quality in Qualitative Evaluation: A framework for assessing research evidence' [2003] *National Centre for Social Research*
- Stavins R 'Experience with Market-Based Environmental Policy Instruments' in Karl-Göran Mäler and Jeffrey Vincent (eds) *Handbook of Environmental Economics* (Elsevier Science, 2003)
- Stehman S and Raymond Czaplewski, 'Design and Analysis for Thematic Map Accuracy Assessment: Fundamental Principles' (1998) 64(3) *Remote Sensing of Environment*, 331
- Talus K, *EU energy law and policy: a critical account*, (Oxford University Press, 2013)
- Tietenberg T *Emissions Trading: Principles and Practice* (2nd Ed, Earthscan, 2006)
- Tridimas T, *The General Principles of EU Law* (3rd Edition, Oxford EU Law Library, 2016)
- United Nations, *UN Treaty Handbook*, <http://untreaty.un.org>
- Victor D *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (Princeton University press, 2004)
- Wagner G and Martin Weitzman *Climate Shock: The Economic Consequences of a Hotter Planet* (Princeton University Press, 2015)
- Weatherill S, *Cases and Materials on EU Law* (10th Edition, Oxford University Press 2012)
- Weiler J H H, *The Constitution of Europe – "Do the new clothes have an emperor?"*, (Cambridge University Press 1999)
- Weiss R, *Learning from Strangers: The Art and Method of Qualitative Interview Studies* (Free Press, 1994)
- Welsch M *Europe's Energy Transition: Insights for Policy Making* (Elsevier, 2017)
- Williams A *EU Human Rights Policies. A Study in Irony* (Oxford University Press, 2004), 145–57

Willig C *Introducing Qualitative Research in Psychology Adventures in Theory and Method* (Open University Press, 2001)

Wolfrum R and Nele Matz *Conflicts in International Environmental Law* (Springer, 2003), 6-13

Woods L, *Free Movement of Goods and Services within the European Community* (Ashgate Publishing 2004)

Woods L and Philippa Watson *EU Law* (Oxford University Press 2014)

Wright S *The Handbook of International Loan Documentation* (Palgrave MacMillan, 2014)

Yanow D and Peregrine Schwartz-Shea *Interpretation and Method: Empirical Research Methods and the Interpretive Turn* (Routledge, 2014)

Yin R *Case study research: design and methods* (2nd ed., Sage, 1994)

Zucca L *Constitutional Dilemmas: Conflicts of Fundamental Legal Rights in Europe and the USA* (Oxford University Press, 2008)

Edited Books

van Agt C 'The energy infrastructure challenge' in Katinka Barysch (ed) *Green, safe, cheap: Where next for EU energy policy?* (Centre for European Reform, 2011)

Ammann O, 'The Court of Justice of the European Union and the Interpretation of International Legal Norms: To Be or Not to Be a "Domestic" Court?' in Nicolas Levrat and Pola Cebulak (eds) *The European Union and International Law* (Schulthess, 2015)

Andreasson H, 'Sweden' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

Arts K and Anna Dickson 'EU development cooperation: from model to symbol?' in Karin Arts and Anna K Dickson (eds) *EU development cooperation: from model to symbol?* (Manchester University Press, 2004)

Atapattu S, 'International Environmental Law and Soft Law: A New Direction or a Contradiction?' in Cecilia Bailliet (ed.), *Non-State Actors, Soft Law and Protective Regimes: From the Margins* (Cambridge University Press, 2012)

Aust A, 'Alternatives to Treaty-Making: MOUs as Political Commitments' in Duncan Hollis (ed) *The Oxford Guide To Treaties* (Oxford University Press, 2013)

Boute A, 'Energy Trade & Investment Law: International Limits to EU Energy Law & Policy' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

Brunnée J, 'Promoting compliance with multilateral environmental agreements' in Jutta Brunnée, Meinhard Doelle and Lavanya Rajamani (eds) *Promoting Compliance in an Evolving Climate Regime* (Cambridge University Press, 2012) 38

Banakar R, 'Introducing Legal Uncertainty', in Reza Banakar (ed.) *Normativity in Legal Sociology: Methodological Reflections on Law and Regulation in Late Modernity* (Springer, 2014)

Beaud O 'The Allocation of Competences in a Federation' in Loïc Azoulay (ed) *The Question of Competence in the European Union* (Oxford University Press, 2014)

Bodansky D 'Deconstructing the Precautionary Principle' in David Caron, Harry Scheiber (eds) *Bringing New Life to Ocean Waters* (Brill, 2004)

Bodansky D, 'Legally Binding versus Non-Legally Binding Instruments' in Scott Barrett, Carlo Carraro and Jaime de Melo (eds) *Towards a Workable and Effective Climate Regime* (Centre for Economic Policy Research Press, 2015) 155

Borowski M, 'Legal Pluralism in the European Union' in Agustín José Menéndez and John Erik Fossum (eds) *Law and Democracy in Neil MacCormick's Legal and Political Theory: The Post-Sovereign Constellation* (Springer, 2011)

Boyle A, 'Soft Law in International Law-Making' in Malcolm Evans (ed) *International Law* (4th Edition Oxford University Press, 2014), 118

Bratspies R and Russell Miller *Transboundary Harm in International Law: Lessons from the Trail Smelter Arbitration* (Cambridge University Press, 2009)

Brown-Weiss E 'Intergenerational equity: a legal framework for global environmental change' in Edith Brown Weiss (ed) *Environmental change and international law: New challenges and dimensions* (United Nations University Press, 1992)

Bruce S 'The sustainable energy transition through international and EU law' in Stephen Minas and Vassilis Ntousas (eds) *EU Climate Diplomacy Politics, Law and Negotiations* (Routledge, 2018)

Brunnée J 'Environment, Multilateral Agreements' in R Wolfrum (ed) *Max Planck Encyclopedia of Public International Law* (Oxford University Press, 2011)

Cameron P and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)

- Casier T, 'The Geopolitics of the EU's Decarbonization Strategy: A Bird's Eye Perspective', in Claire Dupont and Sebastian Oberthür (eds) *Decarbonization in the European Union: Internal Policies and External Strategies* (Palgrave Macmillan, 2015), 159
- Charmaz K 'Constructionism and the Grounded Theory Method' in Jaber Gubrium, James Holstein (eds.) *Handbook of Interview Research: Context and Method*, (Sage, 2002), 397
- Chynoweth P, 'Legal Research' in Andrew Knight and Les Ruddock (eds), *Advanced Research Methods in the Built Environment* (Wiley-Blackwell, 2008) 37
- Coop G and Bernhard Maier 'The External Relations of EU Energy Regulation' in Peter Cameron and Raphael Heffron (eds.), *Legal Aspects of EU Energy Regulation*, (2nd ed, Oxford University Press, 2016), 80
- Crossley P, 'The role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)
- Dagilyte E, 'Solidarity - a General Principle of EU Law? Two Variations on the Solidarity Theme' in A Biondi, Egle Dagilyte and E Kucuk.(Eds.), *Solidarity in EU Law: Legal Principle in the Making* (Edward Elgar, 2018)
- Dantin M, Christophe Lefort, Thomas Herman and Raphaëlle Buot de L'Epine, 'France' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Davies G, 'Interpretative Pluralism within EU Law' in Gareth Davies and Matej Avbelj (eds) *Research Handbook on Legal Pluralism and EU Law* (Elgar, 2018)
- Deane P, Seán Collins, Brian Ó'Gallachóir, Cherrelle Eid, Rupert Hartel, Dogan Keles and Wolf Fichtner 'Impact on Electricity Markets: Merit Order Effect of Renewable Energies' in Manuel Welsch, Steve Pye, Dogan Keles, Aurélie Faure-Schuyer, Audrey Dobbins, Abhishek Shivakumar, Paul Deane, Mark Howells (eds) *Europe's Energy Transition - Insights for Policy Making Findings* (Elsevier, 2017)
- Delreux T, 'The EU as an Actor in global environmental politics' in Andrew Jordan and Camilla Adelle (eds) *Environmental Policy in the European Union: Contexts, Actors and Policy Dynamics* (3rd edn, Earthscan, 2012)
- Edward D, 'Judging Environmental Law' in Gil Carlos and Rodríguez Iglesias (eds) *Une communauté de droit* (BWV Berliner Wissenschafts, 2003)
- Ferrari G F, 'Energy Law in Italy' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)
- Fischer C 'Technical innovation and design choices for emissions trading and other climate policies, in: Brend Hansjürgens (Ed) *Emissions Trading for Climate Policy - US and European Perspectives* (Cambridge University Press, 2005), 40
- Flyvbjerg B, 'Case study', in Norman Denzin and Yvonna Lincoln (eds.) *The Sage Handbook of Qualitative Research* (SAGE, 2011), 301
- Faure M and Marjan Peeters (eds) *Climate Change Liability* (Elgar, 2001)
- Freestone D 'The United Nations Framework Convention on Climate Change—The Basis for the Climate Change Regime' in Kevin Gray, Richard Tarasofsky, and Cinnamon Carlarne (eds) *The Oxford Handbook of International Climate Change Law* (Oxford University Press, 2016)
- Gauer C and Lars Kjølbye 'Energy' in by Ali Nikpay and Jonathan Faull (eds) *The EC Law of Competition* (Oxford University Press, 2014)
- Gerards J H, 'Fundamental Rights and Other Interests: Should It Really Make a Difference?' in E Brems (ed) *Conflicts Between Fundamental Rights* (Intersentia 2008)
- del Guayo I, 'Energy Law in Spain' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016);
- Haritz M 'Liability with and liability from the precautionary principle in climate change cases' in Michael Faure and Marjan Peeters (eds) *Climate Change Liability* (Elgar, 2011) Harrison G 'Stocks and Flows' in Steven Durlauf and Lawrence Blume (eds) *The New Palgrave Dictionary of Economics* (Palgrave Macmillan, 2008)
- Hart H L A 'Positivism and the Separation of Law and Morals' (1958) 71 *Harvard Law Review*, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983)
- Heffron R 'Shared Governance': ACER and the Roles of the National Energy and Competition Regulators in the EU' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Heffron R and Peter Cameron, 'The Future of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Hildebrand P, 'The European Community's environmental policy, 1957 to 1992', in David Judge (ed) *A Green Dimension for the European Community*, (Frank Cass 1992) Hoffheimer M *Examples & Explanations: Conflict of Laws* (Aspen, 2012); Adrian Briggs *The Conflict of Laws* (Oxford University Press, 2008)
- Hollis D 'Defining Treaties' in Duncan Hollis (ed) *The Oxford Guide To Treaties* (Oxford University Press, 2013)
- Jordan A and A Lenschow (Eds) *Innovation in Environmental Policy? Integrating the Environment for Sustainability* (Elgar, 2008)

- King N, 'Using templates in the thematic analysis of text', in Catherine Cassell and Gillian Symon (eds.), *Essential guide to qualitative methods in organizational research* (SAGE, 2004), 427
- Knill C and Duncan Liefferink, 'The Establishment of EU Environmental Policy' in Andrew Jordan and Camilla Adelle (eds), *Environmental Policy in the European Union: Contexts, Actors and Policy Dynamics* (3rd edn, Earthscan 2012)
- Koopmann Hans-Martin and René Vanhaesendonck, 'Standard Agreements in European Energy Trade' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)
- Kottari M and Panagiotis Roumeliotis, 'Renewable energy governance: Challenges within a "puzzled" institutional map', in Evanthe Michalena, and Jeremy Maxwell Hills (eds), *Renewable Energy Governance: Complexities and Challenges* (Springer, 2013)
- Krämer R, 'The Notion of Diagonal Conflicts as a Key Concept of European Conflicts Law' in Christian Joerges (ed) *After Globalisation, New Patterns of Conflict and their Sociological and Legal Reconstructions* (ARENA Report No 4/11, 2011), 145, 158
- Kuijper P, 'Customary International Law, Decisions of International Organisations and Other Techniques for Ensuring Respect for International Legal Rules in Jan Wouters, André Nollkaemper and Erika de Wet (eds.) *European Community Law' in The Europeanisation of International Law: The Status of International Law in the EU and its Member States*, (Asser Press, 2008), 87
- Kulovesi K, 'EU Emissions Trading Scheme: preventing carbon leakage before and after the Paris Agreement' in Rafael Leal-Arcas and Jan Wouters (eds.) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)
- Lauriol T, 'Energy Law in France' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)
- Leidner R *Fast Food, Fast Talk Service Work and the Routinization of Everyday Life* (University of California Press, 1993), 238
- Levy D, 'Business and the Evolution of the Climate Regime: The Dynamics of Corporate Strategies' in David Levy and Peter Newell (eds), *The Business of Global Environmental Governance* (Massachusetts Institute of Technology, 2005) 73
- Marín-Benítez G, 'The European Union, the State Competence in Tax Matters and Abuse of the EU Freedoms' in José Manuel Almudi Cid, Jorge Ferreras Gutierrez and Pablo Hernandez Gonzalez-Barreda (eds) *Combating Tax Avoidance in the EU: Harmonization and Cooperation in Direct Taxation* (Wolters Kluwer, 2019)_
- Michalak A, 'Expected Return on Capital in Mining Industry' in Ali Al-Juboury (ed) *Contributions to Mineralization* (InTeach, 2018)
- Morgenthau H, 'Positivism, Functionalism, and International Law' in Gerry Simpson (ed) *The Nature of International Law* (Routledge, 2017)
- Nilsson M, 'Energy governance in the European Union: enabling conditions for a low carbon transition?' in Geert Verborg and Derk Loorbach (eds), *Governing the Energy Transition: Reality, Illusion, or Necessity?*, (Routledge, 2012), 296
- Nollkaemper A 'Three Conceptions of the Integration Principle in International Environmental Law' in Andrea Lenschow (ed) *Environmental Policy Integration Greening Sectoral Policies in Europe* (Routledge, 2002)
- Nowag J 'The Environmental Integration Obligation of Article 11 TFEU' in Julian Nowag (ed) *Environmental Integration in Competition and Free-Movement Laws* (Oxford University Press, 2017)
- Oberthür S 'The Climate Change Regime: Interactions With ICAO, IMO and the EU Burden-Sharing Agreement' in Sebastian Oberthür and Thomas Gehring (eds) *Institutional Interaction in Global Environmental Governance: Synergy and Conflict Among International and EU Policies* (MIT Press, 2006)
- Odudu O, 'Economic activity has a limit to Community law' in Catherine Barnard & Okeoghene Odudu (eds), *The Outer Limits of European Union Law* (Hart Publishing, 2009), 225
- Olsen B, 'Renewable energy: public acceptance and citizens' financial participation in Daniel Faber and Marjan Peeters (eds) *Climate Change Law* (Elgar, 2016)
- Oschmann V, 'Introduction to European Law on Renewable Energy Sources' in Leslie Parker, Jennifer Ronk, and Rachel Maxwell (eds), *From Debate to Design: Issues in Clean Energy and Climate Change Law and Policy* (Yale School of Forestry and Environmental Studies 2008)
- Olshansky E, Generating theory using grounded theory methodology. In: Mary de Chesnay (ed.) *Nursing Research Using Grounded Theory: Qualitative Designs and Methods in Nursing* (Springer, 2015), 19-28
- Pauwelyn J and Manfred Elsig, 'The Politics of Treaty Interpretation: Variations and Explanations across International Tribunals', in Jeffrey L Dunoff and Mark A Pollack (eds) *Interdisciplinary Perspectives on International Law and International Relations The State of the Art* (Cambridge University Press, 2012), 445
- Parisi F (ed) *The Oxford Handbook of Law and Economics: Volume 1: Methodology and Concepts* (Oxford University Press, 2017)
- Perez-Arriaga I, Luis Olmos, and Michel Rivier, 'Transmission Pricing' in Juan Rosellón and Tarjei Kristiansen (eds.), *Financial Transmission Rights, Lecture Notes in Energy* (Springer, 2013)

- Petersmann E-U 'International Activities of the European Union and Sovereignty of Member States' in Enzo Cannizzaro (ed), *The European Union as an Actor in International Relations* (Kluwer Law International, 2002), 321
- Pielow J-C and Hans-Martin Koopmann, 'Energy Law in Germany' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)
- Pritzsche K and Sebastian Pooschke, 'Germany' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Proelss A 'The Scope of the EU's Competences on the Field of the Environment' In: Yumiko Nakanishi (ed) *Contemporary Issues in Environmental Law. Environmental Protection in the European Union*, vol 5 (Springer, 2016)
- Puettter U, 'The Latest Attempt at Institutional Engineering: The Treaty of Lisbon and Deliberative Intergovernmentalism in EU Foreign and Security Policy Coordination' in Paul Cardwell (ed) *EU External Relations Law and Policy in the Post-Lisbon Era* (Asser Press, 2012), 17
- Rajamani L and Emmanuel Guérin 'Central Concepts in the Paris Agreement and How They Evolved' in Daniel Klein, María Pía Carazo, Meinhard Doelle, Jane Bulmer, Andrew Higham, Emmanuel Guérin (eds) *The Paris Climate Agreement: Analysis and Commentary* (Oxford University Press, 2017)
- Redgwell C, 'International Regulation of Energy Activities' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)
- Rivier M, Ignacio Pérez-Arriaga and Luis Almos 'Electricity Transmission' in Ignacio Pérez-Arriaga (ed) *Regulation of the Power Sector* (Springer, 2014), 294
- Roggenkamp M, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)
- Jan-Willem Rossem 'The Autonomy of EU Law: More is Less?' in Ramses Wessel and Steven Blockmans *Between Autonomy and Dependence: The EU Legal Order under the Influence of International Organisations* (Springer, 2013), 22
- Rubin H and Irene Rubin Keeping on Target while Hanging Loose Designing Qualitative Interviews in Herbert Rubin and Irene Rubin (eds) *Qualitative Interviewings: the Art of Hearing Data* (SAGE, 1995)
- Schiellerup P 'Energy saving is the key to EU energy and climate goals' in Katinka Barysch (ed) *Green, safe, cheap: Where next for EU energy policy?* (Centre for European Reform, 2011)
- Schomerus T, 'Renewable energy: support mechanisms' in Daniel Faber and Marjan Peeters (eds) *Climate Change Law* (Elgar, 2016) Schütze R, 'EU Competences: Existence and Exercise' in Damian Chalmers and Anthony Arnall (eds) *The Oxford Handbook of European Union Law* (Oxford University Press, 2015)
- Segbers K, 'The New Global Landscape and Energy Politics in the 21st Century' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)
- Shelton D 'Introduction' in Dinah Shelton (ed) *Commitment and Compliance: The Role of Non-Binding Norms in the International Legal System* (Oxford University Press, 2000)
- Shoani-Tehrani B and Pascal da Costa 'The Paradoxes of the European Energy Market Regulation: A Historical & Structural Analysis of the Electricity Mix' in Pascal da Costa and Danielle Attias (eds) *Towards Sustainable Economy: Paradoxes & Trends in Energy & Transportation* (Springer, 2018)
- Simma B, 'Bilateralism and Community Interest in the Law of State Responsibility' in Yoram Dinstein (ed), *International Law at a Time of Perplexity: Essays in Honour of Shabtai Rosenne* (Martinus Nijhoff 1989)
- Sjåfjell B, 'The Legal Significance of Article 11 TFEU for EU Institutions and Member States' in Beate Sjåfjell and Anja Wiesbrock (eds) *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously* (Routledge 2015)
- Skou Andersen M, 'Towards a level playing field for EU's energy-related taxation' in Karen Pittel, Ian Parry and Herman Vollebergh (eds) *Energy Tax and Regulatory Policy in Europe: Reform Priorities* (MIT Press, 2017)
- Spencer L, Jane Ritchie and William O'Connor, 'Analysis: Practices, principles and processes' in Jane Ritchie and Jane Lewis (eds) *Qualitative Research Practice: A Guide for Social Sciences Students and Researchers* (1st edn. Sage, 2003), 199
- Stanic A 'An Overview of EU Energy Law' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Starlinger T 'Austria' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Stavins R 'Experience with Market-Based Environmental Policy Instruments' in Karl-Göran Mäler and Jeffrey Vincent (eds) *Handbook of Environmental Economics* (Elsevier Science, 2003), 359
- Taekema S and Bart van Klink, 'On the border: Limits and Possibilities of Interdisciplinary Research', in Bart van Klink and Sanne Taekema (eds), *Law and Method, Interdisciplinary Research into Law* (Tübingen: Mohr Siebeck, 2011) 7

- Talus K and Pami Aalto, 'Competences in EU energy policy' in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)
- Thomas R, 'Interviewing Important People in Big Companies' in Rosanna Hertz and Jonathan Imber (eds) *Studying elites using qualitative methods* (SAGE, 1995), 3-17
- Toope S 'Formality and Informality' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds) *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 108
- Tsagourias N, 'Introduction – Constitutionalism: a theoretical roadmap' in Nicholas Tsagourias (ed) *Transnational Constitutionalism: International & European Perspectives* (Cambridge University Press 2007)
- Vedder H, Anita Rønne, Martha M Roggenkamp, and Íñigo del Guayo, 'EU Energy Law' in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe* (Oxford University Press, 2016) Verhoeven D and Guillaume Possoz, 'Belgium' in Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016)
- Vranes E, 'Processes and Production Methods: A Special Case under the GATT and the TBT Agreement?' in Erich Vranes (ed) *Trade and the Environment Fundamental Issues in International Law, WTO Law, and Legal Theory* (Oxford University Press, 2009)
- de Vries S 'The Protection of Fundamental Rights Within Europe's Internal Market After Lisbon: An endeavour for more harmony' in Sybe de Vries, Ulf Bernitz and Stephen Weatherill (eds) *The Protection of Fundamental Rights in the EU After Lisbon* (Hart, 2013)
- Vos E, 'Making Informal International Law Accountable: Lessons from the EU' in Joost Pauwelyn, Ramses Wessel and Jan Wouters (eds) *Informal Law Making* (Oxford University Press, 2012)
- Weart S *The Discovery of Global Warming* (Harvard University Press, 2008)
- Webley L, 'Qualitative Approaches to Empirical Legal Research' in Peter Cane and Herbert Kritzer, (eds) *The Oxford Handbook of Empirical Legal Research* (Oxford University Press, 2010)
- Weiler J, 'Why Should Europe be a Democracy: The Corruption of Political Culture and the Principle of Tolerance' in Francis Snyder (ed) *The Europeanisation of Law: The Legal Effects of European Integration* (Bloomsbury, 2000)
- von Weizsäcker E 'Ecological Tax Reform' in Ernst von Weizsäcker (eds) *A Pioneer on Environmental, Climate and Energy Policies* (Springer, 2014), 99
- Winter G, 'Introduction' in Gerd Winter (ed.), *Multilevel Governance and Global Environmental Change* (Cambridge University Press, 2006)
- Winter G, 'The legal nature of environmental principles in international, EC and German law' in R Macrory (ed.) *Principles of European Environmental Law* (Europa Law Publishing, 2004), 19
- Ziegler K, 'The Relationship Between EU Law and International Law', in D Patterson and A Soderston (eds) *A Companion to EU and International Law* (Wiley Blackwell, 2016), 42

Journal Articles

- Abbott K and Duncan Snidal, 'Hard and Soft Law in International Governance' (2000) 54(3) *International Organisation* 421
- Adelle C and Duncan Russel Climate Policy Integration: A Case of Déjà Vu?' (2013) 23,1 *Environmental Policy and Governance* 1
- Agnolucci P, 'Wind electricity in Denmark: A survey of policies, their effectiveness and factors motivating their introduction', (2007) 11 *Renewable and Sustainable Energy Reviews* 951
- Akerlof G, 'The market for "lemons": quality uncertainty and the market mechanism' (1970) 84(3) *The Quarterly Journal of Economics* 4
- Jonathan Aldred 'The Ethics of Emissions Trading' (2012) 17(3) *New Political Economy*
- de Alegria-Mancisidor I M, Pablo Díaz de Basurto Uruga Iñigo Martínez de Alegría Mancisidor and Patxi Ruiz de Arbuló López, 'European Union's Renewable Energy Sources and Energy Efficiency Policy Review: The Spanish Perspective' (2009) 13 *Renewable and Sustainable Energy Reviews* 100
- Amir R, Adriana Gama and Katarzyna Werner 'On Environmental Regulation of Oligopoly Markets: Emission versus Performance Standards' (2018) 70(1) *Environmental Resource Economics* 147
- Amundsen E and Lars Bergmancle, 'Provision of Operating Reserve Capacity: Principles and Practices on the Nordic Electricity Market, (2007) 2(1) *Competition and Regulation in Network Industries*
- Ankersmit L, 'Facilitating' Infringements of Article 34TFEU and the Territorial Nature of Green Electricity Support schemes: Case C-573/12 Ålands Vindkraft v Energimyndigheten' [2014] *European Law*

- Asmelash H B, 'Energy subsidies and WTO dispute settlement: Why only renewable energy subsidies are challenged', (2015) 18 (2) *Journal of International Economic Law*
- d'Aspremont J, 'Reductionist Legal Positivism in International Law' [2012] *Proceedings of the 106th Annual Meeting of the American Society of International Law*
- Artés A and Gonzalo Olivera, 'Renewable Energy in Spain' [2019] *King & Wood Mallesons*
- Attride-Stirling J, 'Thematic networks: An analytic tool for qualitative research' (2001) 1(3) *Qualitative Research* 385
- Avilés L, 'Sustainable development and environmental legal protection in the European Union: A model for Mexican courts to follow?' (2014) 6(2) *Mexican Law Review*
- Babiker M, 'Climate change policy, market structure, and carbon leakage' (2005) 65 *Journal of International Economics*, 421
- Bachmann T and Jonathan van der Kamp, 'Environmental cost-benefit analysis and the EU (European Union) Industrial Emissions Directive: Exploring the societal efficiency of a DeNOx Retrofit at a coal-fired power plant' (2014) 68 *Energy*, 125
- Baldwin R, 'The Case against Infant-Industry Tariff Protection' (1969) 77(3) *Journal of Political Economy* 295
- Ball R, Joseph Gerakos, Juhani Linnainmaa and Valeri Nikolaev 'Earnings, Retained Earnings, and Book-to-Market in the Cross Section of Expected Returns' (2018) 17(3) *Chicago Booth Research Paper*
- Bang G, Jon Hovi and Tora Skodvin, 'The Paris Agreement: Short-Term and Long-Term Effectiveness' (2016) 4(3) *Politics and Governance* 209
- Bárány A and Dalia Grigonytė, 'Measuring Fossil Fuel Subsidies', European Commission, available at http://ec.europa.eu/economy_finance/publications/economic_briefs/2015/pdf/eb40_en.pdf, accessed 15 October 2016
- Barber N, 'Legal Pluralism and the European Union' (2006) 12(6) *European Law Journal*
- Baruah P, Nicholas Eyre, Meysam Qadrdan, Modassar Chaudry, Simon Blainey, Jim Hall, Nicholas Jenkins and Martino Tran, 'Energy system impacts from heat and transport electrification' (2014) 167(3) *Proceedings of the Institution of Civil Engineers*
- Barbour R, 'The newfound credibility of qualitative research? Tales of technical essentialism and co-option' (2003) 13(7) *Qualitative Health Research* 1019
- Barnard C and Simon Deakin, 'Market Access and Regulatory Competition', Jean Monnet Working Paper 9/01
- Barnhizer D, 'Waking From Sustainability's "Impossible Dream": The Decision Making Realities of Business and Government' (2006) 8 *Geo. International Environmental Law Review* 595
- Bachmann T and Jonathan van der Kamp, 'Environmental cost-benefit analysis and the EU Industrial Emissions Directive: Exploring the societal efficiency of a DeNOx retrofit at a coal-fired power plant' (2014) 68 *Energy* 125
- Bartie S, 'The Lingering Core of Legal Scholarship' (2010) 30(3) *Legal Studies*, 345
- Beck G, 'The Macro Level: The Structural Impact of General International Law on EU Law The Court of Justice of the EU and the Vienna Convention on the Law of Treaties' (2016) 35(1) *Yearbook of European Law*, 484, 486
- Behn D, Ole Fauchald and Laura Letourneau-Tremblay 'Promoting Renewable Energy in the EU: Shifting trends in Member State policy space' (2017) 28(2) *European Business Law Review* 217
- Bellantuono Giuseppe 'Renewables, Investments, and State Aids: Exploring the Legal Side of Polycentricity' [2017] *Institute of European Law Birmingham Law School Working Paper 04/2017*
- Bendiek, 'A Paradigm Shift in the EU's Common Foreign and Security Policy: From Transformation to Resilience' [2017] *German Institute for International and Security Affairs*
- Benson D and A Jordan, 'Grand bargain or 'incomplete contract'? Environmental implications of the EU Reform Treaty' (2008) 17(5) *European Energy and Environmental Law Review* 280
- Bergek A, Ingrid Mignon and Gunnel Sundberg, 'Who invests in renewable electricity production? Empirical evidence and suggestions for further research' (2013) 56 *Energy Policy*, 568
- Bernard N 'Discrimination and Free Movement in EC Law' (1996) 45(1) *International & Comparative Law Quarterly* 82
- Bermdes G, Neil Bird and Annette Cowie 'Bioenergy, Land Use Change and Climate Change Mitigation' [2010] *IEA Bioenergy*
- Berry J, 'Validity and Reliability Issues in Elite Interviewing' (2002) 35(4) *Political Science and Politics*, 679
- Benvenisti E and George Downs, 'The Empire's New Clothes: Political Economy and the Fragmentation of International Law' (2007) 60(2) *Stanford Law Review* 595
- Bhagwat P, Kaveri Lychettira, Jorn Richstein, Emile Chappin and Laurens De Vries, 'The effectiveness of capacity markets in the presence of a high portfolio share of renewable energy sources' (2017) 48 *Utilities Policy*, 76
- Bianchi A, 'Human Rights and the Magic of Jus Cogens' (2008) 19(3) *The European Journal of International Law*, 491

- Bjørndal E, Mette Bjørndal and Victoria Gribkovskaia, 'A Nodal Pricing Model for the Nordic Electricity Market' [2014] Norwegian School of Economics Working Paper
- Bloom N, 'Fluctuations in Uncertainty' (2014) 28(2) *Journal of Economic Perspectives*, 153
- Bodansky D, 'The Legal Character of the Paris Agreement' (2016) 25(2) *Review of European, Comparative, and International Environmental Law* 142
- Boddy C, 'Sample size for qualitative research' (2016) 19(4) *Journal of Qualitative Market Research*, 426;
- Bogojević S, 'The EU ETS Directive Revised: Yet Another Stepping Stone' (2009) 11(4) *Environmental Law Review*
- Bohn R, Michael Caramanis and Fred Schweppe, 'Optimal pricing in electrical networks over space and time' 1984 15(3) *Rand Journal of Economics* 360Böhringer C, Andreas Keller, Markus Bortolamedi and Anelise Rahmeier Seyffarth, 'Good things do not always come in threes: On the excess cost of overlapping regulation in EU climate policy' (2016) 94 *Energy Policy*
- Bolton P, Neng Wang and Jinqiang Yang, 'Investment under Uncertainty and the Value of Real and Financial Flexibility' [2014] *American Finance Association*
- Bolton R, Timothy Foxon and Stephen Hall, 'Energy transitions and uncertainty: Creating low carbon investment opportunities in the UK electricity sector' (2016) 34(8) *Environment and Planning Government and Policy*
- Bonnie A, 'The Evolving Role of the European Commission in the Enforcement of Community Law: From Negotiating Compliance to Prosecuting Member States?' (2010) 1(2) *Journal of Consciousness Exploration & Research*
- Bosetti V and Jeffrey Frankel 'Politically feasible emissions targets to attain 460 ppm CO₂ concentrations' (2012) 6 *Review of Environmental Economics and Policy*
- Bossmann T and Iain Staffell, 'The shape of future electricity demand: Exploring load curves in 2050s Germany and Britain' (2015) 90 *Journal of Energy* 1317
- Bothwell C and Benjamin Hobbs, 'Crediting wind and solar renewables in electricity capacity markets: the effects of alternative definitions upon market efficiency' (2017) *Energy Journal* 38
- Boutabba M A and Sandrine Lardic, 'EU Emissions Trading Scheme, Competitiveness and carbon leakage: new evidence from cement and steel industries' (2017) 255(1) *Annals of Operations Research* 47
- Boute A, 'Regulatory Stability Under Russian and EU Energy Law' (2015) 22 (4) *Maastricht Journal of European & Comparative Law*
- Bouzarovski S and Saska Petrov, 'A global perspective on domestic energy deprivation: Overcoming the energy poverty-fuel poverty binary' (2015) 10 *Energy Research & Social Science* 31
- Bowen F, Aloysius Newenham-Kahindi and Irene Herremans, 'When Suits Meet Roots: The Antecedents and Consequences of Community Engagement Strategy' (2010) 95(2) *Journal of Business Ethics* 297
- Braun V and Victoria Clarke, 'Using thematic analysis in psychology' (2006) 3(2) *Qualitative Research in Psychology* 77
- Brinded M, 'Energy Barometer' [2018] *Energy Institute*
- Brinkhorst L J 'The Road to Maastricht' (1993) 20(1) *Ecology Law Quarterly* 7
- Bristow G, Richard Cowell and Max Munday, 'Windfalls for Whom? The Evolving Notion of "Community" in Community Benefits Provisions from Wind Farms' (2012) 43 *Geoforum* 1108
- Brockett S, 'The EU Enabling Legal Framework for Carbon Capture & Storage and Geological Storage' (2009) *Energy Procedia* 4433
- Bronk R, 'Hayek on the wisdom of prices: a reassessment' (2013) 6(1) *Erasmus Journal for Philosophy and Economic*, 82
- Brutus S, Herman Aguinis and Ulrich Wassmer, 'Self-Reported Limitations and Future Directions in Scholarly Reports: Analysis and Recommendations' (2013) 39(1) *Journal of Management*, 48
- Bryman A, 'How many qualitative interviews is enough?' in Sarah Baker and Rosalind Edwards (eds.) *How Many Qualitative Interviews is Enough? Expert Voices and Early Career Reflections on Sampling and Cases in Qualitative Research*, ESRC National Centre for Research Methods, University of Southampton, Southampton (2012), 18
- Burke A, 'Federated States of Micronesia v Czech Republic: greenhouse emissions as transboundary pollution' (2011) 14(1-2). *Asia Pacific Journal of Environmental Law* 203
- Burke M and Jennie Stephens, 'Energy democracy: Goals and policy instruments for sociotechnical transitions' (2017) 33 *Energy Research & Social Science*, 35
- Burke M and Jennie Stephens, 'Political power and renewable energy futures: A critical review' (2018) 35 *Energy Research & Social Science*
- Burger C and Jens Weinmann, 'Germany's Decentralized Energy Revolution' (2014) *Distributed Generation and its Implications for the Utility Industry* 49

Burniaux J-M and Jean Chateau, 'Greenhouse gases mitigation potential and economic efficiency of phasing-out fossil fuel subsidies' (2014) 140 *International Economics* 71

Bushnell J, H Chong and E Mansur, 'Profiting from regulation: Evidence from the European Carbon Market' (2013) 5(4) *American Economic Journal: Economic Policy* 78

Bussard C, Melchior Moosa, Ricardo Alvarez, Philipp Wolf, Tjark Thien, Hengsi Chen, Zhuang Cai, Matthias Leuthold, Dirk Uwe Sauera and Albert Moser, 'Optimal Allocation and Capacity of Energy Storage Systems in a Future European Power System with 100% Renewable Energy Generation' (2014) 46 *Energy Procedia* 40

Caldecott B, G Lomax, and M Workman, 'Stranded Carbon Assets and Negative Emissions Technologies: Working Paper' (2015) *Smith School of Enterprise & the Environment, University of Oxford*

van Calster G, 'Climate Change and Renewable Energy as a Super Trump for EU Trade Law However all Essent clear' (2014) 1 *2014 Renewable Energy Law & Policy Review* 60

Campello M, John Graham and Campbell Harvey, 'The real effects of financial constraints: Evidence from a financial crisis' (2010) 97(3) *Journal of Financial Economics* 470

de-Cananea G, 'Is European Constitutionalism Really Multilevel' [2009] *German-Italian conference of public law*

Carl J and David Fedor, 'Tracking global carbon revenues: A survey of carbon taxes versus cap-and-trade in the real world' (2016) 96 *Energy Polic*, 50

Carley S, 'Energy-based Economic Development' (2011) 15 *Renewable and Sustainable Energy Reviews* 282

Carter D and Moritz Jesse, 'The "Dano Evolution": Assessing Legal Integration and Access to Social Benefits for EU Citizens' (2018) 3(3) *European Papers*, 1179

Caytas J, 'The COP21 Negotiations: One Step Forward, Two Steps Back' (2018) 19(1) *Consilience: The Journal of Sustainable Development* 1

Chambliss E, 'When do Facts Persuade? Some Thoughts on the Market for 'Empirical Legal Studies' (2008) 71(2) *Law and Contemporary Problems* 17

Churchill R and Geir Ulfstein, 'Autonomous Institutional Arrangements in Multilateral Environmental Agreements: A Little-Noticed Phenomenon in International Law' (2000) 94 *American Journal of International Law* 623

Coady D, Ian Parry, Louis Sears and Baoping Shanga, 'How Large Are Global Fossil Fuel Subsidies?' (2017) 91 *World Development* 11

Coase R, 'The problem of social costs' (1960), 3 *Journal of Law & Economics* 1

Coen D and Chris Doyle, 'Liberalisation of Utilities and Evolving European Regulation' (2003) *Economic Outlook*

Cosmi C, Jolanta Dvarionienė, Isabel Marques, Senatro Di Leo, Giedrius Gecevičius, Inga Gurauskienė, Gisela Mendes, Catarina Selada, 'A Holistic Approach to Sustainable Energy Development at Regional Level: The RENERGY Self-Assessment Methodology' (2015) 49 *Renewable and Sustainable Energy Reviews*, 693

Cordonier Segger Marie-Claire, Ashfaq Khalfan and Salim Nakjavani, 'Weaving the Rules for our Common Future: Principles, Practices and Prospects for International Sustainable Development Law' (2002) www.cisdl.org/wtr/pdf/WeavingtheRulesOct2002.pdf 20 accessed 25 July 2017

Cramton P 'Electricity Market Design' (2017) 33(4) *Oxford Review of Economic Policy*, 589

Creutzig F, Peter Agoston, Jan-Christoph Goldschmidt, Gunnar Luderer, Gregory Nemet and Robert Pietzcker, 'The underestimated potential of solar energy to mitigate climate change' (2017) 2 *Nature Energy*

Danaher J, 'Protecting the Future or Compromising the Present? Sustainable Development and the Law' (2006) 14 *IS Law Review*, 117

Dani M, 'Economic and Social Conflicts, Integration and Constitutionalism in Contemporary Europe' [2009] *London School of Economics Europe in Question Series Paper No. 13/2009* 46

Dani M, 'Rehabilitating Social Conflicts in European Public Law' (2012) 18 *European Law Journal* 621

Davies G, 'Understanding Market Access: Exploring the economic rationality of different conceptions of free movement law' (2010) 11 *German Law Journal* 671

van Der Wansem A, 'Judgment of the European Court of Justice, 1 July 2014: Case C-573/12, Ålands Vindkraft AB v Energimyndigheten' (2015) 42(4) *Legal Issues of Economic Integration*, 401

Dearnley C, 'A reflection on the use of semi-structured interviews' (2005) 13(1) *Nurse Researcher*, 19

Denholm P and Maureen Hand, 'Grid flexibility and storage required to achieve very high penetration of variable renewable electricity' (2011) 39(3) *Energy Policy*, 1817

Denza E, 'International Aviation and the EU Carbon Trading Scheme: Comment on the Air Transport Association of America Case' (2012) 37 *European Law Review*, 314, 324

Diefenbach T, 'Are case studies more than sophisticated storytelling?: Methodological problems of qualitative empirical research mainly based on semi-structured interviews' (2009) 43 *Quality & Quantity*, 875

Dietz S, Alex Bowen, Baran Doda, Ajay Gambhir, and Rachel Warren, 'The Economics of 1.5°C Climate Change' (2018) 43 *Annual Review of Environment and Resources*

- Diller J, 'Economic, Social and Cultural Human Rights: The Journey towards Peremptory Norms in International Law' (2018) 36(1) Nordic Journal of Human Rights, 19
- Dilling O, 'From Compliance to Rulemaking: How Global Corporate Norms Emerge from Interplay with States and Stakeholders' (2012) 13 German Law Journal, 381, 404
- Doody O and Maria Noonan, 'Preparing and conducting interviews to collect data' (2013) 20(5) Nurse Researcher, 28
- Đorđević D and Milan Veselinović 'The Policy of Renewable Energy Sources in the Function of the Environmental Protection in the EU' (2015) 53 (3) Economic Themes
- Driesen D, 'Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Change Convention' (1998) 26(1) Boston College Environmental Affairs Law Review
- Dugumar L, Peter Minang and Meine van Noordwijk 'Climate Change Mitigation and Adaptation in the Land Use Sector: From Complementarity to Synergy' (2014) Journal of Environmental Management
- Duke K, 'Getting beyond the 'Official Line': Reflections on dilemmas of access, knowledge and power in researching policy networks' (2002) 31(1) Journal of Social Policy, 39
- Dupont C and Sebastian Oberthür 'Insufficient Climate Policy Integration in EU Energy Policy: The Importance of the Long-Term Perspective' (2012) 8 Journal of Contemporary European Research, 228
- Duscha V and Pablo del Rio, 'An economic analysis of the interactions between renewable support and other climate and energy policies' (2017) 28(1–2) Energy & Environment, 11
- Elghali L, Roland Clift, Philip Sinclair, Calliope Panoutsou and Ausillo Bauen, 'Developing a Sustainability Framework for the Assessment of Bioenergy Systems' (2007) 35 Energy Policy 6075
- Ellerman D and B Buchner, 'Over-allocation or Abatement? A Preliminary Analysis of the EU ETS based on the 2005-06 Emissions Data', (2008) 41(2) Environmental & Resource Economics 267
- Ellerman D, Claudio Marcantonini and Aleksandar Zaklan, 'The European Union Emissions Trading System: Ten Years and Counting' (2016) 10(1) Review of Environmental Economics and Policy 89
- Ericsson K, Suvi Huttunen, Lars Nilsson and Per Svenningsson, 'Bioenergy policy and market development in Finland and Sweden', (2004) 32 Energy Policy, 1707
- Erkens D, Mingyi Hung and Pedro Matos, 'Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide' (2012) 18 Journal of Corporate Finance, 389
- Evju S, 'Revisiting the Posted Workers Directive: Conflict of Laws and Laws in Contrast' (2009) 12 Cambridge Yearbook of European Legal Studies
- Eydeland A and Krzysztof Wolyniec *Energy and Power Risk Management: New Developments in Modeling, Pricing, and Hedging* (Wiley, 2002
- Fama E and Kenneth French, 'Size, value, and momentum in international stock returns' (2012) 105(3) Journal of Financial Economics, 457
- Fan Y, Jun-Jun Jia, XinWang and Jin-HuaXu, 'What policy adjustments in the EU ETS truly affected the carbon prices?' (2017) 103 Energy Policy, 145
- Feinstein N, 'Learning from Past Mistakes: Future Regulation to Prevent Greenwashing' (2013) 40(1) Boston College Environmental Affairs Law Review, 229
- Ferrey S, 'The Failure of International Global Warming Regulation to Promote Needed Renewable Energy' (2010) 37 Boston College Environmental Affairs Law Review, 67
- Filipović S, and Mirjana Golušin, 'Environmental taxation policy in the EU—New methodology approach' (2015) 88 Journal of Clean Products, 308
- Fischer C and Louis Preonas, 'Combining Policies for Renewable Energy: Is the Whole Less than the Sum of its Parts?' (2010) 4 International Review of Environmental and Resource Economics 51
- Foster E, Marcello Contestabile, Jorge Blazquez, Baltasar Manzano, Mark Workman, Nilay Shah, 'The unstudied barriers to widespread renewable energy deployment: Fossil fuel price responses' (2017) 103 Energy Policy, 258
- Fouquet D and Thomas Johansson, 'European Renewable Energy Policy at Crossroads - Focus on Electricity Support Mechanisms' (2008) 36 Energy Policy, 4079
- Fouquet D, 'Policy Instruments for Renewable Energy – From a European Perspective' (2013) 49 Renewable Energy 15
- Fouquet D and J Nysten, 'Guarantees of Origin and Green Electricity Certificates in Flanders and in Sweden national design weaknesses or violation of European rules? (2013) 3(3) ,European Energy Journal, 72
- Fouquet D and Angela Guarrata, 'Judgment of 1 st July 2014 in Alands Vindkraft AB v Energimyndigheten Comments on Case C-573/12' (2014) 1 Renewable Energy Law and Policy Review, 52
- Fox N, 'Foucault, Foucauldians and Sociology' (1998) 49(3) The British Journal of Sociology, 415
- Francis J, Marie Johnston, Clare Robertson, Liz Glidewell, Vikki Entwistle, Martin Eccles and Jeremy Grimshaw 'What is an adequate sample size? Operationalising data saturation for theory-driven interview studies' (2010) 25(10) Psychology & Health, 1229

- Fuller L, 'Positivism and Fidelity to Law: a Reply to Professor Hart' (1958) 71 Harvard Law Review, 630
- Fusch P and Lawrence Ness, 'Are we there yet? Data saturation in qualitative research' (2015) 20(9) The Qualitative Report, 1408;
- Fuss S, Christian Flachsland, Nicolas Koch, Ulrike Kornek, Brigitte Knopf and Ottmar Edenhofer, 'A Framework for Assessing the Performance of Cap-and-Trade Systems: Insights from the European Union Emissions Trading System' (2018) 12(2) Review of Environmental Economics and Policy 220
- Galvin R, 'How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?' (2015) 1 Journal of Building Engineering, 2García-Gusano D, Diego Iribarren and Javier DuFour, 'Is coal extension a sensible option for energy planning? A combined energy systems modelling and life cycle assessment approach' (2018) 114 Energy Policy, 413
- Gatersleben B, Linda Steg and Charles Vlek, 'Measurement and Determinants of Environmentally Significant Consumer Behavior' (2002) 34(3) Environment and Behavior, 335
- Geels F, Florian Kern, Gerhard Fuchs, Nele Hinderer, Gregor Kungl, Josephine Mylan, Mario Neukirch, and Sandra Wassermann, 'The enactment of socio-technical transition pathways: A reformulated typology and a comparative multi-level analysis of the German and UK low-carbon electricity transitions (1990–2014)' (2016) 45(4) Research Policy, 896
- Geradin D and Nicolas Petit, 'Judicial Review in European Union Competition Law: A Quantitative and Qualitative Assessment' (2011) 8 Tilburg Law and Economics Center, 7
- De Gasperi G-C, 'Making State Aid Control "Greener": The EU Emissions Trading System and its Compatibility with Article 107 TFEU' (2010) 9(4) European State Aid Law Quarterly, 785
- Geroe S, 'Addressing Climate Change Through a Low-Cost, High-Impact Carbon Tax' (2019) 28(1) Journal of Environment & Development, 3
- Gerring J, 'What is a case study and what is it good for?', (2004) 98(2) The American Political Science Review, 341
- Giraud A, 'Vents De Colère! – Testing the Limits of PreussenElektra' (2014) 13(2) European state aid Law Quarterly, 345
- Glachant J-M and Sophia Ruester, 'The EU Internal Electricity Market: Done Forever?' (2014) 31 Utilities Policy 221, 228
- Görlacha B 'Emissions Trading in the Climate Policy Instrument Mix: understanding and Managing Interactions with other Policy Instruments', (2014) 25(34) Energy & Environment 733
- Govaere I 'To Give or to Grab: The Principle of Full, Crippled and Split Conferral of Powers Post-Lisbon' (2016) 4 College of Europe Research Papers in Law
- Gracceva F and Peter Zeniewski, 'A systemic approach to assessing energy security in a low-carbon EU energy system' (2015) 123 Applied Energy, 345
- Gram-Hanssen K, 'Consuming Technologies – Developing Routines ' (2008) 16(11) Journal of Cleaner Production 1181
- Green J, 'Order out of Chaos: Public and Private Rules for Managing Carbon' (2013) 13(2) Global Environmental Politics 2
- Green R, 'Nodal pricing of electricity: how much does it cost to get it wrong?' (2007) 31 Journal of Regulatory Economics 125
- Grubb M and Karsten Neuhoff, 'Allocation & Competitiveness in the EU Emissions Trading Scheme: Policy Overview', (2006) 6 Journal of Climate Policy, 35 Michael Grubb and Karsten Neuhoff, 'Allocation & Competitiveness in the EU Emissions Trading Scheme: Policy Overview', (2006) 6 Journal of Climate Policy, 35
- Guest G, Arwen Bunce and Laura Johnson, 'How Many Interviews Are Enough? An Experiment with Data Saturation and Variability' (2006) 18(1) Field Methods, 59
- Gunst A, 'Impact of European Law on the Validity and Tenure of National Support Schemes for Power Generation from Renewable Energy Sources' (2005) 23 Journal of Energy & Natural Resources Law 95
- Guruswamy L, 'Energy Justice and Sustainable Development' (2010) 21 Colorado Journal of International Environmental Law and Policy 231
- Haak A and Michael Brüggemann, 'Compatibility of Germany's Renewable Energy Support Scheme with European state aid Law – Recent Developments and Political Background' (2016), 15(1) European State Aid Law Quarterly, 91
- Haan-Kamminga A, 'Long-term Liability for Geological Carbon Storage in the EU' (2011) 29 Journal of Energy & Natural Resources Law 309
- Haas R, Wolfgang Eichhammer, Claus Huber, Ole Langniss, Arturo Lorenzonid, Reinhard Madlenere, Phillipe Menanteau, P Morthorst, A Martinsh, A Oniszki, Joachim Schleich, Adrian Smith, Z Vassk and A Verbruggen, 'How to Promote Renewable Energy Systems Successfully and Effectively' (2004) 32 Energy Policy 833
- Haghighi S, 'Energy Security and the Division of Competences between the European Community and its member states' (2008) 14(4) European Law Journal, 461

Hajos A, Paget Fulcher, Ian Johnson, Goran Strbac and Danny Pudjianto 'Supporting investments into renewable electricity in context of deep market integration of RES-e after 2020: Study on EU-, regional- and national-level options', (2015) CEPA London, ENER/C1/2015-39

Halvorssen A, 'International Law and Sustainable Development – Tools for Addressing Climate Change' (2010-2011) 39 *Denver Journal International Law & Policy* 397

Hart H, 'Positivism and the Separation of Law and Morals' (1958) 71(4) *Harvard Law Review* 593, 601-2

Harvey W, 'Strategies for Conducting Elite Interviews' (2011) 11(4) *Qualitative Research*, 431

Hatzopoulos V, 'The concept of 'economic activity' in the EU Treaty: From ideological dead-ends to workable judicial concepts' (2012) *European Business Law Review*

Heffron R and Darren McCauley, 'Achieving sustainable supply chains through energy justice' (2014) 123 *Applied Energy* 435

Heffron R and Kim Talus, 'The evolution of energy law and energy jurisprudence: Insights for energy analysts and researchers' (2016) 19 *Energy Research & Social Science* 1

Heffron R, Darren McCauley and Gerardo Zarazua de Rubens, 'Balancing the energy trilemma through the Energy Justice Metric' [2018] (*Energy Justice Special Issue*), *Applied Energy*

Heidbreder E 'Strategies in multilevel policy implementation: moving beyond the limited focus on compliance' (2017) 24(9) *Journal of European Public Policy* 1367

Helm D, Cameron Hepburn and Richard Mash, 'Credible Carbon Policy' (2003) 19(3) *Oxford Review of Economic Policy*

Helm D, 'The European framework for energy and climate policies' (2014) 64 *Energy Policy* 29

Hennink M, Bonnie Kaiser and Vincent Marconi, 'Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough?' (2016) 27(4) *Qualitative Health Research*, 591

van Hende K, 'Internal and External Policy and Legal Challenges in the EU in Achieving a Sustainable, Competitive and Secure Internal Energy Market and the Integration of Electricity from Renewable Energy Sources into the Energy system' (2011) 2 *Nordic Environmental Law Journal* 53

Hepburn C, 'Regulation by Prices, Quantities, or Both: A Review of Instrument Choice' (2006) 22 (2) *Oxford Review of Economic Policy* 225

Hervás F and Soriano, Fulvio Mulatero, 'EU Research and Innovation (R&I) in renewable energies: The role of the Strategic Energy Technology Plan (SET-Plan)' (2011) 39(6) *Energy Policy* 3582

Hills J and Evanthe Michalena, 'Renewable energy pioneers are threatened by EU policy reform' (2017) 108 *Renewable Energy* 26

Hillyard P 'Invoking Indignation: Reflections on Future Directions of Socio-legal Studies' (2002) 29 *Journal of Law and Society*, 650

Hober K, 'Investment Arbitration and the Energy Charter Treaty' (2010) 1(1) *Journal of International Dispute Settlement* 153

Holden C, Stacey Jacobsen and Avaniidhar Subrahmanyam, 'The Empirical Analysis of Liquidity' (2014) 8(4) *Foundations and Trends in Finance*, 263

Hossain K, 'The Concept of Jus Cogens and the Obligation Under The U.N. Charter' (2005) 3(1) *Santa Clara Journal of International Law*, 72

Howlett M and Jeremy Rayner, 'Patching v packaging in policy formulation: assessing policy portfolio design' (2013) 1(2) *Politics & Governance*, 170

Hu J, Robert Harmsen, Wina Crijns-Graus, Ernst Worrell and Machteld van den Broek, 'Identifying barriers to large-scale integration of variable renewable electricity into the electricity market: A literature review of market design' (2018) 81 *Renewable and Sustainable Energy Reviews*, 2181

Hu J, Wina Crijns-Graus, Long Lam and Alyssa Gilbert, 'Ex-ante Evaluation of EU ETS During 2013-2030: EU Internal Abatement' (2015) 77 *Energy Policy* 152

Huber M, Desislava Dimkova and Thomas Hamacher, 'Integration of wind and solar power in Europe: Assessment of flexibility requirements' (2014) 69 *Energy*, 236

Huhta K, James Kroeger, Tade Oyewunmi and Piti Eiamchamroonlarp, 'Legal and Policy issues for Capacity Remuneration Mechanisms in the Evolving European Internal Market' (2014) *European Energy & Environmental Law Review*, 76

Husovec M, 'Intellectual Property Rights and Integration by Conflict: The Past, Present and Future' (2016) 18 *Cambridge Yearbook of European Legal Studies*, 239

Hutchinson T and Nigel Duncan 'Defining & describing What We do: Doctrinal Legal Research' (2012) 17(1) *Deakin Law Review*, 83, 101

Hyseni S 'Carbon Capture and Storage as a Method to Mitigate Climate Change' (2017) 9(3) *Inquiries Journal*

Ivashina V and David Scharfstein 'Bank lending during the financial crisis of 2008' (2010) 97(3) *Journal of Financial Economics*, 319

- Itzcovich G, 'The Interpretation of Community Law by the European Court of Justice' (2009) 10(5) German Law Journal, 537
- Jacobs F, 'The Role of the European Court of Justice in the Protection of the Environment' (2006) 18(2) Journal of Environmental Law, 185
- Jacobsen H K and Sascha Thorsten Schröder, 'Curtailed renewable generation: Economic optimality and incentives' (2012) 49 Energy Policy, 663
- Jacobsson S, 'The emergence and troubled growth of a "bio-power" innovation system in Sweden', (2008) 36 Energy Policy, 1491
- Jacobsson S and Volkmar Lauber, 'The politics and policy of energy system transformation: Explaining the German diffusion of renewable energy technology', (2006) 34 Energy Policy, 256
- Jacobsson S, Anna Bergek, Dominique Finon, Volkmar Lauber, Catherine Mitchell, David Toke, Aviel Verbruggen, 'EU Renewable Energy Support Policy: Faith or Facts?' (2009) 37 Energy Policy 2143
- Jansen J and Martine Uytendil, 'A Fragmented Market on the Way to Harmonisation? EU Policy Making on Renewable Energy Promotion' (2004) 8(1) Energy for Sustainable Development 93
- Jensen S, Kristina Mohlins, Karen Pittelz, and Thomas Sterner, 'An introduction to the green paradox: the unintended consequences of climate policies' (2015) 9 Review of Environmental Economics and Policy, 246
- Jenkins J, 'Political economy constraints on carbon pricing policies: What are the implications for economic efficiency, environmental efficacy, and climate policy design?' (2014) 69 Energy Policy, 467
- Joerges Christian, Poul Kjaer and Tommi Ralli, 'A New Type of Conflicts Law as Constitutional Form in the Postnational Constellation' (2011) 2(2) Transnational Legal Theory, 153, 155
- Johnson S and Guy Corcelle, *The Environmental Policy of the European Communities*, (Graham & Trotman, 1989)
- Johnson A 'Free Allocation of Allowances Under the EU Emissions Trading Scheme – Legal Issues' (2006) 6 Journal of Climate Policy, 115
- Johnson A, Raphael Heffron and Darren McCauley, 'Rethinking the scope and necessity of energy subsidies in the United Kingdom' (2014) 3 Energy Research & Social Science, 1
- Joos M I and Iain Staffell, 'Short-term integration costs of variable renewable energy: Wind curtailment and balancing in Britain and Germany' (2018) 86 Renewable and Sustainable Energy Reviews, 45 Jordan A, D Huitema, M Hildén, H van Asselt, T Rayner, J Schoenefeld, and E Boasson, 'Emergence of polycentric climate governance and its future prospects' (2015) 5 Nature Climate Change, 977
- Junquera B and Jesús Ángel Del Brío 'Preventive Command and Control Regulation: A Case Analysis' (2016) 99(8) Journal of Sustainability
- Kalimo H, Filip Sedefov and Max Jansson, 'Market definition as value reconciliation: The case of renewable energy promotion under the WTO Agreement on Subsidies and Countervailing Measures', (2017) 17(3), International Environmental Agreements: Politics, Law and Economics
- Kalkuhl M, Ottmar Edenhofer and Kai Lessmann, 'Renewable energy subsidies: Second-best policy or fatal aberration for mitigation?' (2013) 35(3) Resource and Energy Economics, 217
- Kane L and Graham Ault, 'A review and analysis of renewable energy curtailment schemes and Principles of Access: Transitioning towards business as usual' (2014) 72 Energy Policy, 67
- Kanellakis M, G Martinopoulos and T Zachariadis, 'European Energy Policy – A Review' (2013) 62(c) European Energy Policy, 1020
- Kemp L 'US Proofing the Paris Climate Agreement' (2017) 17(1) Climate Policy
- Kern F and Michael Howlett, 'Implementing transition management as policy reforms: a case study of the Dutch energy sector' (2009) 42(4) Policy Sciences, 391
- Kinley R 'Climate change after Paris: from turning point to transformation' (2016) 17 Climate Policy
- Kirkpatrick C, David Parker and Yin-Fang Zhang, 'Foreign Direct Investment in Infrastructure in Developing Countries: Does Regulation Make a Difference?', (2006) 15(1) Transnational Corporations
- Kitzing L, Catherine Mitchell and Poul Erik Morthorst, 'Renewable Energy Policies in Europe: Converging or Diverging?' (2012) 51 Energy Policy, 192
- Klackenberg D, Christian Egenhofer and Kyriakos Gialoglou 'Rethinking the EU Regulatory Strategy for the Internal Energy Market' (2004) Task Force Report No 52, Centre for European Policy Studies
- Klinge-Jacobsen H, Lise Lotte Pade, Sascha Thorsten, Schröder Lena Kitzing, 'Cooperation Mechanisms to Achieve EU Renewable Targets' (2014) 63 Renewable Energy 345
- Knight C, 'What is grandfathering?' (2013) 22(3) Environmental Politics, 410
- Koskeniemi M, 'Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law' [2006] International Law Commission
- Koskeniemi M and Päivi Leino, 'Fragmentation of International Law? Postmodern Anxieties' (2002) 15 Leiden Journal of International Law, 553

- Kollmuss A, 'Tackling 60% of the EU's Climate Problem the Legislative Framework of the Effort Sharing Decision' (May 2013) Carbon Market Watch Report, 4
- Korpela T, Tomas Björkqvist, Yrjö Majanne and Pentti Lautala 'Online monitoring of flue gas emissions in power plants having multiple fuels' (2014) 47(3) International Federation of Automatic Control, 1355
- Kosenius Anna-Kaisa and Markku Ollikainen, 'Valuation of environmental and societal trade-offs of renewable energy sources' (2013) 62 Energy Policy 1148
- Kovacs R and A Leverett, 'A load flow based method for calculating embedded, incremental and marginal cost of transmission capacity' (1994) 9(1) IEEE Transactions on Power Systems
- Krämmer L, 'The Genesis of EC Environmental Principles' (2003) 7 College of Europe
- Kramer M, 'How Moral Principles Can Enter Into The Law' (2000) 6(1) Legal Theory, 83
- Krogh-Boomsma T and Kristin Linnerud, 'Market and policy risk under different renewable electricity support schemes' (2015) 89 Energy, 435
- Krzeminska J, 'Are Support Schemes for Renewable Energies Compatible with Competition Objectives? An Assessment of National and Community Rules' (2007) 7 Yearbook of European Environmental Law 132
- Kungl G and Frank Geels, 'The Destabilisation of the German Electricity Industry (1998-2015): Application and Extension of a Multi-dimensional Framework' [2016] SOI Discussion Paper 2016-02 – including 22 interviews, considering all industry sectors not just renewables
- Lancaster K, 'Confidentiality, anonymity and power relations in elite interviewing: conducting qualitative policy research in a politicised domain' (2017) 20(1), 93,93
- Langer J and Wolf Sauter 'The Consistency Requirement in EU Law' (2017) 39 Journal of European Law
- Larik J, 'From Speciality to a Constitutional Sense of Purpose: the Changing Role of the Objectives of the European Union' (2014) 63(4) International & Comparative Law Quarterly, 935
- Larouche P, 'Coordination of European and Member State Regulatory Policy - Horizontal, Vertical and Transversal Aspects' (2004) 5(1) Journal of Network Industries, 277
- Lavranos N, 'The Epilogue in the Mox Plant Dispute: An End Without Findings' (2009) European Energy and Environmental Law Review
- Lazarus R, 'Super Wicked Problems & Climate Change: Restraining the Present to Liberate the Future' (2009) Cornell Law Review 1153
- Lazowsky A and Ramses Wessel, 'When Caveats Turn Into Locks: Opinion 2/13 on Accession of the European Union to the ECHR' (2015) 16(1) German Law Journal, 179, 187
- Léautier Thomas-Olivier and Claude Crampes, 'Liberalisation of the European electricity markets: a glass half full' (2016) Toulouse School of Economic Management Working Paper available at <http://fsr.eui.eu/liberalisation-european-electricity-markets-glass-half-full>
- Leal-Arcas R and Andrew Filis, 'Conceptualizing EU Energy Security through an EU Constitutional Law Perspective' (2013) 36 Fordham International Law Journal, 1224
- Leal-Arcas R and Andrew Filis, 'Legal Aspects of the Promotion of Renewable Energy within the EU and in Relation to the EU's Obligation in the WTO' (2014) 3(1) Renewable Energy Law & Policy
- Leal-Arcas R and Luigi Carafa 'Road to Paris COP21: Towards Soft Global Governance for Climate Change' (2014) 2 Renewable Energy Law and Policy
- Leal-Arcas R and Stephen Minas, 'Mapping the International and European Governance of Renewable Energy', (2016) 35(1) Yearbook of European Law, 621
- Lean H H and Russel Smyth, 'Will Policies to Promote Renewable Electricity Generation be Effective? Evidence from Panel Stationarity and Unit Root Tests for 115 Countries' (2013) 22 Renewable and Sustainable Energy Reviews 371
- Lee B, 'Managing the Interlocking Climate and Resource Challenges' (2009) 85(6) International Affairs 1101
- Lenaerts K and Eddy de Smijter, 'The European Union as an Actor in International Law' (1999) 19(1) Yearbook of European Law, 95
- Leung D, G Caramanna, and M Maroto-Valer 'An overview of current status of carbon dioxide capture and storage technologies' (2014) 39 Renewable and Sustainable Energy Reviews, 426
- Levine M, Jonathan Koomey, James McMahon, Alan Sanstad and Eric Hirst, 'Energy Efficiency Policy and Market Failures' (2003) 20(1) Annual Review of Energy and the Environment, 535
- Lewis J, 'The rise of renewable protectionism: Emerging trade conflicts and implications for low carbon development', (2014) 14(4) Global Environmental Politics, 10
- Lianos I, 'In Memoriam Keck: The reformation of the EU law on the free movement of goods' [2015] European Law Review 225
- Lindstrom N, 'Service Liberalization in the Enlarged EU: A Race to the Bottom or the Emergence of Transnational Political Conflict?' (2010) 48 Journal of Common Market Studies 1307

- Lopes P A, 'FSM vs. Czech': A New "Standing" for Climate Change? (2010) 10(2) Sustainable Development Law & Policy 24
- Lorenzoni I and Nick Pidgeon 'Public Views on Climate Change: European and USA Perspectives' (2006) 77(1) Climate Change 73
- Löschel A and Oliver Schenker, 'On the Coherence of Economic Instruments: Climate, Renewables and Energy Efficiency Policies' (2014) Energy Tax & Regulatory Policy Conference CESInfoLucas J Noel Valdés, Gonzalo Escribano Francés and Enrique San Martín González, 'Energy security and renewable energy deployment in the EU: Liaisons Dangereuses or Virtuous Circle?' (2016) 62 Renewable and Sustainable Energy Reviews, 1032
- Maarten F and Jan Venman, 'The effect of allocation above emissions and price uncertainty on abatement investments under the EU ETS' (2016) 125 Journal of Cleaner Production, 595
- Maas W, 'The Origins, Evolution, and Political Objectives of EU Citizenship' (2014) 15(5) German Law Journal, 797
- Maguire M and Brid Delahunt, 'Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars' (2017) 8(3) All Ireland Journal of Teaching and Learning in Higher Education
- Maniatis K and Stefan Tostmann, 'EU Technology Strategy on Bioenergy: From Blue-Sky Research to Targeted Technology Development' (2010) Renewable Energy Law & Policy Review 169
- Marks G, Liesbet Hooghe and Kermit Blank, 'European Integration from the 1980's: State-centric v Multi-level Governance' (1996) 34(3) Journal of Common Market Studies, 341
- Marshall C, 'Elites, Bureaucrats, Ostriches, and Pussycats: Managing Research in Policy Settings' (1984) 15(3) Anthropology and Education Quarterly, 235
- Masini A and Emanuela Menichetti, 'The impact of behavioural factors in the renewable energy investment decision making process: Conceptual frame work and empirical findings' (2012) 40 Energy Policy, 28
- McDowell L, 'Elites in the City of London: some methodological considerations' (1998) 30 Environment and Planning, 2133
- McGowan F, 'Can the European Union's Market Liberalism Ensure Energy Security in a Time of "Economic Nationalism"' (2008) 4(2) Journal of Contemporary European Research, 93, 94
- Mete G and Ernesto Bonafé, 'Construction of Regional Energy Market Within a Multilateral Regulatory Framework: Escalated interactions between EU energy law and the Energy Charter Treaty' (2016) 9(3) The Journal of World Energy Law & Business
- Meyer N, 'Influence of government policy on the promotion of wind power', (2006) 25 International Journal of Global Energy Issues, 204
- Meyer-Ohendorf N, Benjamin Görlach and Ennid Roberts, 'EU Effort Sharing Decision after 2020: Auctioning of AEAs' (19 January 2016) Ecological Institute, Berlin
- Michaels R and Joost Pauwelyn, 'Conflict of Norms or Conflict of Laws?: Different Techniques in the Fragmentation of International Law' (2012) 22(3) Duke Journal of Comparative & International Law, 349 Michalena E and Jeremy Hills, 'Renewable Energy Issues and Implementation of European Energy Policy: The Missing Generation?' (2012) 45 Energy Policy, 201
- Mignon I and Anna Bergek, 'Investments in renewable electricity production: The importance of policy revisited' (2016) 88 Renewable Energy, 307
- Mirtchev A 'The Greening of Geopolitics' [2013] European Energy Review, 2
- Morales J and Salvador Pineda, 'On the inefficiency of the merit order in forward electricity markets with uncertain supply' (2017) 261(2) European Journal of Operational Research, 789
- Moreno-Bromberg S and Luca Taschini 'Pollution permits, strategic trading and dynamic technology adoption' [2011] Grantham Research Institute on Climate Change and the Environment Working Paper No. 45
- Moreno-Lax V, 'Systematising Systemic Integration: "War Refugees", Regime Relations, and a Proposal for a Cumulative Approach to International Commitments' (2014) 12 Journal of International Criminal Justice, 907
- Morris Zoë Slote, 'The Truth about Interviewing Elites' (2009) 29(3), 209
- Mortelmans K 'Towards a convergence of the application of the rules on free movement and Competition' (2001) Common Market Law Review 613
- Mott R 'New State Aid Guidelines for Renewable Energy Discourage Competition, Green Energy and Energy Security' (2015) 5(2) European Energy Journal
- Mundis D, 'ICTY (Appeals Chamber): Prosecutor v. Delalić (Čelebići Case)' (2001) 40(3) International Legal Materials, 626
- Mundaca G, 'How much can CO₂ emissions be reduced if fossil fuel subsidies are removed?' (2017) 64 Energy Economics 91
- Munir M, 'History and Evolution of the Polluter Pays Principle: How an economic idea became a legal principle?' (2013) Social Science Research Network

- Napolitano G, 'Towards a European Legal Order for Services of General Economic Interest' (2005) 11(4) European. Public Law, 565
- Nash H, 'The European Commission's Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan' (2009) 17 Journal of Cleaner Production 496
- Natorski M and Anna Surrallès, 'Securitising Moves to Nowhere? The Framing of the European Union's Energy Policy' (2008) 4 Journal of Contemporary European Research 71
- Newbury D 'Reforming Competitive Electricity Markets to Meet Environmental Targets', (2012) 1(1) Journal of Economics of Energy & Environmental Policy
- Newbery D, Michael Pollitt, Robert Ritz and Wadim Strielkowski, 'Market design for a high-renewables European electricity system' (2018) 91 Renewable and Sustainable Energy Reviews, 695
- Nicolini M and Massimo Tavoni, 'Are renewable energy subsidies effective? Evidence from Europe' (2017) 74(c) Renewable and Sustainable Energy Reviews 412
- Nolden C, 'Governing community energy—Feed-in tariffs and the development of community wind energy schemes in the United Kingdom and Germany' (2013) 63 Energy Policy, 543
- Novitz T and P Syrpis, 'Economic and Social Rights in Conflict: Political and Judicial Approaches to Their Reconciliation' (2008) 33 European Law Review
- Nowell L, Jill Norris, Deborah White and Nancy Moules, 'Thematic Analysis: Striving to Meet the Trustworthiness Criteria' (2017) 16(1) International Journal of Qualitative Methods
- Nugent N and Mark Rhinard, 'The political roles of the European Commission' [2019] Journal of European Integration
- Oberthür S and Lisanne Groen, 'Explaining goal achievement in international negotiations: the EU and the Paris Agreement on climate change' (2018) 25(5) Journal of European Public Policy, 708
- Oberthür S and Claire Roche Kelly, 'EU Leadership in International Climate Policy: Achievements and Challenges' (2008) 43(3) International Spectator
- Olmstead S and Robert Stavins 'Three key elements of a post-2012 international climate policy architecture' (2012) 6 Review of Environmental Economics and Policy
- Ondraczek J, N Komendantova and A Patt, 'WACC the dog: The effect of financing costs on the levelised cost of solar PV power' (2015) 75, Renewable Energy, 888
- Onweugbuzie A and K Collins, 'A Typology of Mixed Method Sampling Designs in Social Sciences Research' (2007) 12 The Qualitative Report, 281
- Oppong S, 'The problem of sampling in qualitative research' (2013) 2(2) Asian Journal of Management Science and Education, 202
- O'Riordan T, 'Cultures of Community Energy: A Policy Report' [2016] The British Academy
- Outka U, 'The Renewable Energy Footprint' (2011) 30 Stanford Environmental Law Journal, 36
- Ove Eikeland P and Ingvild Andreassen Sæverud, 'Market Diffusion of New Renewable Energy in Europe: Explaining Front-runner and Laggard Positions' (2007) 18(1) Energy and Environment, 13
- Ozkan G, 'Global Energy Security, International Politics and Renewable Energy Sources' (2018) 5(1) International Journal of Multidisciplinary Approach and Studies, 29
- Pachauri R and Andy Reisinger, *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Inter-Governmental Panel on Climate Change 2009)
- Page E 'The hidden costs of carbon commodification: emissions trading, political legitimacy and procedural justice' (2012) 19(5) Democratization, 932
- Le Page M, 'Coal renaissance means switching to plan B on climate change' (2015) 3030 New Scientist
- Palermo P 'Approaches to Generation Dispatch in Transmission Planning' (2009) 135 CIGRE
- Papież M, Sławomir Śmiech and Katarzyna Frodyma, 'Determinants of renewable energy development in the EU countries. A 20-year perspective' (2018) 91 Renewable and Sustainable Energy Reviews 918
- Peers S and Marios Costa, 'Judicial review of EU acts after the Treaty of Lisbon' [2012] University of London Working Paper
- Peeters M, 'Emissions trading as a new dimension to European Environmental Law: The political agreement of the European Council on carbon allowance trading', (2003) 12(3) European Environmental Law Review, 82
- Peeters M, 'Governing Towards Renewable Energy in the EU: Competences, Instruments & Procedures' (2014) 21(1) Maastricht Journal of European & Comparative Law, 39
- Pelkmans J and Marta Simoncini 'Mellowing Meroni: How ESMA can help build the single market' [2014] Centre for European Policy Studies available at <https://www.ceps.eu/system/files/Mellowing%20Meroni.pdf> Accessed 12 February 2019
- Peltzman S, 'Towards a More General Theory of Regulation' (1976) 19(2) Journal of Law & Economics, 211

- Pereira G I and Patrícia Pereira da Silva, 'Energy efficiency governance in the EU-28: analysis of institutional, human, financial, and political dimensions' (2017) 10(5), *Energy Efficiency*, 1279
- Pérez Rodríguez D, 'Electricity Generation and State Aid: Compatibility is the Question' (2016) 15 *European State Aid Law Quarterly*, 207
- Peters A, 'The refinement of international law: From fragmentation to regime interaction and politicization' (2017) 15(3) *International Journal of Constitutional Law*, 671, 671
- Pezzutto S, Gianluca Grilli, Stefano Zambotti and Stefan Dunjic, 'Forecasting Electricity Market Price for End Users in EU28 until 2020—Main Factors of Influence' (2018) 11 *Energies* Pinna A 'The Incompatibility of Intra-EU BITs with European Union Law, Annotation Following ECJ, 6 March 2018, Case 284/16, Slovak Republic v Achmea BV' (2018) 1 *Paris Journal of International Arbitration*, 73
- Plesner U, 'Studying sideways: Displacing the problem of power in research interviews with sociologists and journalists' (2011) 17(6) *Qualitative Inquiry*, 471, 473
- Polzin F, Michael Migendt, Florian Täube and Paschenvon Flotow, 'Public policy influence on renewable energy investments—A panel data study across OECD countries' (2015) 80 *Energy Policy*, 9
- Porter M E and C van der Lind, 'Toward a new conception of the Environmental-Competitiveness Relationship' (1995) 9(4) *The Journal of Economic Perspectives*, 97
- Posner R, 'Theories of economic regulation' (1974) 5(2) *The Bell Journal of Economics and Management Science*, 335.
- Pouikli K, 'The Polluter Pays Principle and the EU State Aid Law for Environmental Protection' (2016) 55 *Journal of Law, Policy and Globalisation*, 19
- Prost M and Paul Clark, 'Unity, Diversity and the Fragmentation of International Law: How Much Does the Multiplication of International Organizations Really Matter?' (2006) 5(2) *Chinese Journal of International Law*, 34
- Pye S, Francis Li, James Price and Brigit Fais, 'Achieving net-zero emissions through the reframing of UK national targets in the post-Paris Agreement era' (2017) 2(3) *Nature Energy*
- Qing-you Y, Sun Yi-xin, Qin Chao and Tan Zhong-fu, 'The Pricing model for Transmission and Distribution Tariff Under Different Voltage Levels Based on the Long-run Marginal Cost Method' (2015) 9 *Electrical & Electronic Engineering Journal*, 347
- Puri M, Jörg Rocholl and Sascha Steffen 'Global retail lending in the aftermath of the US financial crisis: Distinguishing between supply and demand effects' (2011) 100(3) *Journal of Financial Economics*, 556
- Rahman F A, Md Maniruzzaman Aziza, R Saidur, Wan Azelee Wan Abu Bakar, M.R Hainin, Ramadhansyah Putrajaya, Norhidayah Abdul Hassana, 'Pollution to solution: Capture and sequestration of carbon dioxide (CO₂) and its utilization as a renewable energy source for a sustainable future' (2017) 71 *Renewable and Sustainable Energy Reviews*, 112
- Rajamani L, 'The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations' (2016) 28(2) *Journal of Environmental Law* 337
- Rammer C, Sandra Gottschalk, Michael Peneder, Martin Wörter, Tobias Stucki and Spyros Arvanitis, 'Does energy policy hurt international competitiveness of firms? A comparative study for Germany, Switzerland and Austria' (2017) 109 *Energy Policy* 154
- Reiche D and Mischa Bechberger, 'Policy Differences in the Promotion of Renewable Energies in the EU Member States' (2004) 32 *Energy Policy* 843
- Renna O and Jonathan Marshall, 'Coal, nuclear and renewable energy policies in Germany: From the 1950s to the "Energiewende"' (2016) 99 *Energy Policy* 224
- Rentschler J and Morgan Bazilian, 'Reforming fossil fuel subsidies: drivers, barriers and the state of progress' (2016) 17(7) *Climate Policy* 891
- Rentschler J and Morgan Bazilian, 'Principles for Designing Effective Fossil Fuel Subsidy Reforms' (2017) 11(1) *Review of Environmental Economics and Policy* 135
- del Rio P and Pere Mir-Artigues, 'Combinations of Support Instruments for Renewable Electricity in Europe: A Review' (2014) 40 *Renewable and Sustainable Energy Reviews*, 287
- Redgwell C, 'Energy, Environment and Trade in the European Community' (1994) 12 *Journal of Energy & Natural Resources Law* 128, 140
- Ringel M, 'Fostering the use of Renewable Energies in the European Union: The Race between Feed-in-Tariffs and Green Certificates' (2006) 31(1) *Renewable Energy*, 13
- Ringel M, Barbara Schlomann, Michael Krail and Clemens Rohde, 'Towards a green economy in Germany? The role of energy efficiency policies' (2016) 179 *Applied Energy*, 1293
- Roehrkasten S, *Global Governance on Renewable Energy: Contrasting the Ideas of the German and Brazilian Governments* (Springer, 2015)
- Roy J, Duke Ghosh, Anupa Ghosh and Shyamasree Dasgupta, 'Fiscal Instruments: Crucial Role in Financing Low Carbon Transition in Energy Systems' (2013) 5 *Current Opinion in Environmental Sustainability* 261 Rio P, 'Why does the combination of the European Union Emissions Trading Scheme and a renewable energy target makes economic sense?' (2017) 74 *Renewable and Sustainable Energy Reviews*, 824

- Ritzenhofen I and Stefan Spinler, 'Optimal design of feed-in-tariffs to stimulate renewable energy investments under regulatory uncertainty — A real options analysis' (2016) 53 *Energy Economics* 76
- Robins N and Tridevi Chakma, 'State Aid in Energy under the Spotlight: The implications of the Hinkley Point Decision' (2016) 2 *European State Aid Quarterly*
- Reuter A 'Retroactive Reduction of Support for Renewable Energy and Investment Treaty Protection from the Perspective of Shareholders and Lenders' (2015) 13(3) *Oil, Gas & Energy Law*, 36
- Ruester S, Sebastian Schwenen, Matthias Finger and Jean-Michel Glachant, 'A Post-2020 EU Energy Technology Policy: Revisiting the Strategic Energy Technology Plan' (2014) 66 *Energy Policy* 209
- de Sadeleer N, 'Environmental Governance & the Legal Basis Conundrum' (2012) 31(1) *Yearbook of European Law* 373
- de Sadeleer N, 'Principle of Subsidiarity and the EU Environmental Policy' (2012) 9 *Journal for European Environmental & Planning Law* 63
- Sandelowski M and J Leeman, 'Writing usable qualitative health research findings; (2012) 22 *Qualitative Health Research*, 1404
- Saunders B, Julius Sim, Tom Kingstone, Shula Baker, Jackie Waterfield, Bernadette Bartlam, Heather Burroughs and Clare Jinks, 'Saturation in qualitative research: exploring its conceptualization and operationalization' (2018) 52(4) *Quality & Quantity*, 1893
- Sauter W and Hans Vedder, 'State Aid and Selectivity in the Context of Emissions Trading: Comment on the NOx Case' (2012) 3, *European Law Review*
- Savage J, 'One voice, different tunes: Issues raised by dual analysis of a segment of qualitative data' (2000) 31(6) *Journal of Advanced Nursing*, 1493
- Saveyn B, Antonio Soria Ramírez and Tobias Wiesentha 'Renewable electricity policy: feed-in tariffs versus tradeable green certificates' [2008] Institute for Prospective Technological Studies
- Scharpf F, 'Introduction: The Problem Solving Capacity of Multi-Level Governance' (1997) 4(4) *Journal of European Public Policy*, 520
- Schermeyer H, Claudio Vergara and Wolf Fichtner, 'Renewable energy curtailment: A case study on today's and tomorrow's congestion management' (2018) 112 *Energy Policy*, 427
- Schmidt J, 'Why Europe Leads on Climate Change', (2008) 50(4) *Survival*
- Schmidt-Rohr K, 'Why Combustions Are Always Exothermic, Yielding About 418 kJ per Mole of O₂' (2015) 92(12) *Journal of Chemical Education*, 2094
- Schreurs M and Yves Tiberghien, 'Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation' (2007) 7(4) *Global Environmental Politics*, 19
- Schrödinger E, 'An Undulatory Theory of the Mechanics of Atoms and Molecules' (1926) 28(6) *Physical Review*, 1049
- Segura S, Luis Ferruz, Pilar Gargallo and Manuel Salvador 'Environmental versus economic performance in the EU ETS from the point of view of policy makers: A statistical analysis based on copulas' (2018) 176 *Journal of Cleaner Production*, 1111
- Sensfuß F, Mario Ragwitz and Massimo Genoese, 'The Merit-order effect: A detailed analysis of the price effect of renewable electricity generation on spot market prices in Germany' [2007] Working Paper Sustainability and Innovation No. S 7/2007, Fraunhofer Institute for Systems and Innovation Research
- Sharpston E, 'European Community Law and the Doctrine of Legitimate Expectations: How Legitimate, and for Whom', (1990) 11(1) *Northwestern Journal of International Law & Business*
- Sheavly S and K Register, 'Marine Debris & Plastics: Environmental Concerns, Sources, Impacts and Solutions' (2007) 15(4) *Journal of Polymers and the Environment*, 301
- Shishlov I, Romain Morel and Valentin Bellassen, 'Compliance of the Parties to the Kyoto Protocol in the first commitment period' (2016) 16(6) *Climate Policy*, 768
- Shoani-Tehrani B and Pascal da Costa 'The Paradoxes of the European Energy Market Regulation: A Historical & Structural Analysis of the Electricity Mix' in Pascal da Costa and Danielle Attias (eds) *Towards Sustainable Economy: Paradoxes & Trends in Energy & Transportation* (Springer, 2018)
- Sithole H, T Cockerill, K Hughes, D Ingham, L Ma, R Porter and M Pourkashanian, 'Developing a Sustainable Electricity Generation Mix for the UK's 2050 Future' (2016) 100 *Energy*, 363
- Sjursen H 'The EU as a "normative power": how can this be?' (2006) 13(2) *Journal of European Public Policy*, 235
- Skjærseth J B and Jørgen Wettestad 'Making the EU Emissions Trading System: The European Commission as an entrepreneurial epistemic leader' (2010) 20(2) *Global Environmental Change*, 314
- Smith J and Johannes Urpelainen, 'Removing fuel subsidies: How can international organizations support national policy reforms?' (2017) 17(3) *International Environmental Agreements: Politics, Law and Economics*, 327
- Snell J, 'The Notion of Market Access: A Concept or a Slogan?' (2010) 47(2) *Common Market Law Review*, 437

- Solomon B and Karthik Krishna, 'The Coming Sustainable Energy Transition: Histories, Strategies and Outlook' (2011) 39(11) *Energy Policy*, 7422
- Sommerland H 'Researching and Theorising the Processes of Professional Identity Formation' (2007) 34(2) *Journal of Law and Society*, 190
- Sovacool B, 'Reviewing, Reforming, and Rethinking Global Energy Subsidies: Towards a Political Economy Research Agenda' (2017) 135 *Ecological Economics*, 150
- Spaak T, 'Guidance and Constraint: The Action-Guiding Capacity of Theories of Legal Reasoning', (2007) 26 *Law and Philosophy*, 343
- Spaventa E 'Leaving Keck behind? The free movement of goods after the rulings in *Commission v. Italy and Mickelsson and Roos*' (2009) 6 (34) *European Law Review*
- Sterman J, A Jones, E Johnston and L Siegel, 'Climate Interactive Ratchet Success Pathway: Assumptions and Results' (2015) Climate Interactive, 4, <https://www.climateinteractive.org/wp-content/uploads/2015/12/Ratchet-Success-14-December-2015.pdf> accessed 5 Apr. 2016
- Steinbach J, Mario Ragwitz, Veit Bürger, Liv Becker, Lukas Kranzl, Marcus Hummel, Andreas Müller, 'Analysis of Harmonisation Options for Renewable Heating Support Policies in the European Union' (2013) 59 *Energy Policy* 59
- Steinbach A and Robert Brückmann, 'Renewable Energy and the Free Movement of Goods' (2015) 27(1) *Journal of Environmental Law*, 1
- Stigler G, 'The Theory of Economic Regulation' (1971) 2(1) *The Bell Journal of Economics and Management Science*, 3
- Stoll Peter-Tobias, Wybe Douma, Nicolas de Sadeleer and Patrick Abel, 'CETA, TTIP and the EU precautionary principle. Legal analysis of selected parts of the draft CETA agreement and the EU TTIP proposals' (2016) 4 Jean Monnet Working Paper Series
- von Sydow H S, 'The Dancing Procession of Lisbon: Legal Bases for European Energy Policy' (2011) 1 *European Energy Journal*, 33
- Szydło M, 'How to reconcile national support for renewable energy with internal market obligations? The task for the EU legislature after Ålands Vindkraft and Essent' (2015) 52(2) *Common Market Law Review*, 489
- Szysczak E, 'Time for Renewables to Join the Market: the New Guidelines on state aid for Environmental Protection and Energy' (2014) 5(9) *Journal of European Competition Law and Practice*
- Tirole J, 'Some Political Economy of Global Warming'. (2012) 1(1) *Economics of Energy & Environmental Policy*, 1
- Toke D and Aikaterini Fragaki, 'Do liberalised electricity markets help or hinder CHP and district heating? The case of the UK' (2008) 36(4) *Energy Policy*, 1448
- Tsifopoulou E, 'Renewable-Energy Support Schemes in the Case Law of the Court of Justice of the EU: Tensions Between Trade and Climate Objectives' (2016) 6(3-4) *Climate Law*, 264
- Tulloch D, Ivan Diaz-Rainey and I Premachandra, 'The impact of regulatory change on EU energy utility returns: the three liberalization packages' (2018) 50(9) *Applied Economics*
- Turner K and Antonios Katris, 'A "Carbon Saving Multiplier" as an alternative to rebound in considering reduced energy supply chain requirements from energy efficiency?' (2017) 103 *Energy Policy*, 249
- Tyler H, 'Establishing an Aggressive Legal Framework for the Future of Wind Energy in Europe' (2012) 42 *Vanderbilt Journal of Transnational Law* 1595
- Vainio A, 'Beyond research ethics: Anonymity as 'ontology', 'analysis' and 'independence'' (2013) 13(6) *Qualitative Research*, 685
- van der Veen R, Rudi Hakvoort, 'The electricity balancing market: Exploring the design challenge' (2016) 43(B) *Utilities Policy* 186
- Vasileiou K, Julie Barnett, Susan Thorpe and Terry Young, 'Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period' [2018] *BMC Medical Research Methodology*
- Verbruggen A and Volkmar Lauber, 'Basic Concepts for Designing Renewable Electricity Support Aiming at a Full-scale Transition by 2050' (2009) 37 *Energy Policy* 5732
- Verschuuren J, 'Sustainable Development and the Nature of Environmental Legal Principles' (2006) (1) 9 *Potschefstroom Electricity Law Journal*, 17
- Victor D, 'The Politics of Fossil-Fuel Subsidies' (2009) Available at <https://ssrn.com/abstract=1520984> accessed 20 October 2016
- Victor D, J House and S Joy, 'A Madisonian approach to climate policy' (2005) 309(16) *Science*, 1820
- De Ville F and Jan Orbie, 'The European Commission's Neoliberal Trade Discourse since the Crisis: Legitimizing Continuity through Subtle Discursive Change' (2014) 16(1) *British Journal of Politics and International Relations*, 149

- Viñuales J 'The rise and fall of sustainable development' (2013) 22(1) Review of European, Comparative & International Environmental Law
- Viñuales J, Joanna Depledge, David Reiner and Emma Lees 'Climate policy after the Paris 2015 climate conference' (2017) 17(1) Climate Policy, 1, 7 Jorge Viñuales, Joanna Depledge, David Reiner and Emma Lees 'Climate policy after the Paris 2015 climate conference' (2017) 17(1) Climate Policy, 1, 7
- Vranes E, 'The Definition of 'Norm Conflict' in International Law and Legal Theory' (2006) 17(2) European Journal of International Law, 395, 412
- Wainwright D, 'Can sociological research be qualitative, critical and valid?' (1997) 3(2) Qualitative Report
- Wehland H 'The Enforcement of Intra-EU BIT Awards: Micula v Romania and Beyond' (2016) 17(6) Journal World Investment and Trade, 942 (2016)
- Weibelzahl M, 'Nodal, zonal, or uniform electricity pricing: how to deal with network congestion' (2017) 11(2) Frontiers in Energy 210
- Weishaar S, 'Auctions – The Solution to Windfall Profits and End of All state aid Problems?' (2010) Amsterdam Law Forum
- Weishaar S and Edwin Woerdman, 'Does Auctioning Emission Rights Avoid state aid? Empirical Evidence from Germany' (2012) 6(2) Carbon and Climate Law Review
- Welch C, Rebecca Marschan-Piekkari, Heli Penttinen and Marja Tahvanainen, 'Corporate Elites as Informants in Qualitative International Business Research' (2002) 11(5) International Business Review, 611
- Werksman J, 'The Legal Character of International Environmental Obligations in the Wake of the Paris Climate Change Agreement' (2016) Brodies Environmental Law Lecture Series
- Wettestad J, 'The Making of the 2003 EU Emissions Trading Directive: An Ultra-Quick Process due to Entrepreneurial Proficiency?' (2005) 5(1) Global Environmental Politics, 1
- Wierzbowski M, Izabel Filipiak and Wojciech Lyzwa, 'Polish energy policy 2050 – An instrument to develop a diversified and sustainable electricity generation mix in coal-based energy system' (2017) 74 Renewable and Sustainable Energy Reviews, 51
- Winkler H and Lavanya Rajamani 'Common, but Differentiated, Responsibilities and Respective Capabilities in a Regime Applicable to All' (2014) 14(1) Climate Policy, 50
- Winkler J, Alberto Gaio, Benjamin Pfluger and Mario Ragwitz, 'Impact of renewables on electricity markets – Do support schemes matter?' (2016) 93 Energy Economics 157
- Woerdman E, A Arcuri and S Clo, 'Emissions Trading and the Polluter Pay Principle: Do Polluters Pay under Grandfathering' (2008) 4(2) Review of Law & Economics, 565
- Young M, 'Energy Transitions and Trade Law: Lessons from the Reform of Fisheries Subsidies' (2017) International Environmental Agreements: Politics, Law and Economics; University of Melbourne Legal Studies Research Paper No. 746. Available at <https://ssrn.com/abstract=2930693>
- Zelli F, 'The fragmentation of the global climate governance architecture' (2011) 2 Climate Change, 255
- Zhou H and Jichuan Sheng, 'Has EU ETS caused carbon leakage in the EU carbon-intensive industries? A study from the perspective of bilateral trade' (2015) 13(2) Chinese Journal of Population Resources and Environment, 132
- Ziegler K, 'Beyond Pluralism and Autonomy: Systemic Harmonization as a Paradigm for the Interaction of EU and International Law' (2016) 35(1) Yearbook of European Law, 667
- Zorzetto S, 'The Lex Specialis Principle and its Uses in Legal Argumentation: An Analytical Inquiry' (2012) 3 Eunomia, 61, 66
- Zürn M and Benjamin Faude, 'Commentary: On Fragmentation, Differentiation and Coordination' (2013) 13(3) Global Environmental Politics, 119, 125–126

News Paper & Other Articles (Inc Working Papers)

- Aastveit K A, Gisle James Natvik and Sergio Sola, 'Economic uncertainty and the effectiveness of monetary policy' [2013] Norges Bank Working Paper No. 2013/17
- Abrell J, Anta Ndoye Faye, and Georg Zachmann, 'Assessing the impact of the EU ETS using firm level data' (2011), available at bruegel.org/publications/publication-detail/publication/579-assessing-the-impact-of-the-eu-ets-using-firm-level-data/ accessed 17 January 2018
- Abbas M K 'The Roles Played by the Polluter Pays Principle in state aid Law' (2013) 6 Jean Monnet Working Paper Series available at www.tradeenvironment.eu accessed 28 October 2017
- Attenborough Sir David, 'I'm astonished' by Blue Planet plastic impact - <https://www.bbc.co.uk/newsround/44586290>
- Babonneau F, Alain Haurie and Marc Vielle, 'Welfare implications of EU effort sharing decision and possible impact of a hard Brexit' (May 2017) 5th International Symposium on Environment Energy Finance Issues, Paris

Baker S and Rosalind Edwards, 'How many qualitative interviews is enough' (2012) Discussion Paper NCRM

Banet C, 'The EU Court Of Justice rules in favour of Sweden in the Åland Vindkraft Case', July 2014, <http://www.ecohz.com/facts-news/news/aaland-case> (accessed 1 September 2016)

Bárány A and Dalia Grigonytė, 'Measuring Fossil Fuel Subsidies', European Commission, available at http://ec.europa.eu/economy_finance/publications/economic_briefs/2015/pdf/eb40_en.pdf, accessed 15 October 2016

Bassi S, Maria Carvalho, Baran Doda and Sam Fankhauser, 'Credible, effective and publicly acceptable policies to decarbonise the European Union' [2017] The Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science Working Paper

Bellantuono G 'Renewables, Investments, and State Aids: Exploring the Legal Side of Polycentricity' [2017] Institute of European Law Birmingham Law School Working Paper 04/2017

Bernard J-T and Chantal Guertin, 'Nodal Pricing and Transmission Losses: An Application to a Hydroelectric Power System' [2002] Université Laval, Sainte-Foy, Québec, Canada Working Paper

Banet C, 'The EU Court Of Justice rules in favour of Sweden in the Åland Vindkraft Case', July 2014, www.ecohz.com/facts-news/news/aaland-case (accessed 1 September 2016)

Bartholl C and Markus Böhme, 'Corporate PPAs - A future financing model for renewable energies' [2018] Taylor Wessing

Bird L, Jaquelin Cochran, and Xi Wang, 'Wind and Solar Energy Curtailment: Experience and Practices in the United States' [2014] National Renewable Energy Laboratory Working Paper

Brown P, 'Lessons for Carbon Capture and Storage from the Rollout of Flue-gas Desulphurisation Technology' (2015) 2 Transform - Institute of Environmental Management & Assessment Working Paper

Buck M, Michael Hogan and Christian Redl, 'The Market Design Initiative and Path Dependency: Smart retirement of old, high-carbon, inflexible capacity as a prerequisite for a successful market design' [2015] Agora Energiewende

Cadette E, 'European Commission approves State aid scheme for solar panels in rented residential buildings in Germany' May 2018 Morais Leitão, Galvão Teles, Soares da Silva & Associados Newsletter available at https://www.mlgts.pt/xms/files/Publicacoes/Newsletters_Boletins/2018/Newsletter_Europeu_e_Concendencia_28_EN.PDF accessed 19 June 2018

Caney S and Cameron Hepburn, 'Carbon trading: unethical, unjust and ineffective?' [2011] Grantham Research Institute on Climate Change and the Environment Working Paper No. 49

Calle Saldarriaga M-A, 'Non-product related environmental process and production methods (NPR-PPMs): a view from international trade law and international environmental governance' (2014) PhD Thesis, University College Cork

CEPS Task Force Report, 'Energy Policy for Europe: Identifying the European Added-Value' [2008] Centre for European Policy Studies 61

Commander S, 'A Guide to the Political Economy of Reforming Energy Subsidies' (2012) IZA Policy Paper No. 52 available at <http://ftp.iza.org/pp52.pdf> accessed 1 September 2018

Cox A, David Gascoigne, Matt Firla-Cuchra, Yoon Chong, Adrian Scholtz and Hylton Millar, 'Offshore Transmission: An Investor Perspective' [2012] KPMG available at <https://www.ofgem.gov.uk/ofgem-publications/79347/ofto-aninvestorperspective.pdf> accessed 25 June 2018

Cuff M, 'Explained: Why Europe's businesses enjoy cheaper energy than the UK - and how to fix it' 5 Feb 2018 <https://www.businessgreen.com/bg/analysis/3025947/explained-why-europes-businesses-enjoy-cheaper-energy-than-the-uk-and-how-to-fix-it>

Dimas S, 'Climate Change – International and EU Action' (31 October 2008) Speech of the EU Environment Commissioner at the Climate Change Conference in Prague. Available at: http://europa.eu/rapid/press-release_SPEECH-07-199_en.pdf Accessed 21 March 2017

Duijnhouwer F, 'Enhancing existing flexibility instruments to ensure cost-effectiveness, presentation' (2015)

Dunning H, Joeri Rogelj and Gunnar Luderer, 'Greener energy generation alone will not help us reach climate goals' [2018] Grantham Institute of Climate Change and Environment Working Paper

Durand E and Malcolm Keay, 'National support for renewable electricity and the single market in Europe: the Ålands Vindkraft case' [2014] Oxford Institute for Energy Studies

Ellis J, 'Sustainable Development as a Legal Principle: A Rhetorical Analysis' (2008) available at www.scribd.com/doc/51448971/Sustainable-Development-as-a-Legal-Principle-A-Rhetorical-Analysis

Egenhofer C, Monica Alessi, Anton Georgiev, and Noriko Fujiwara, 'The EU Emissions Trading System and Climate Policy towards 2050: Real incentives to reduce emissions and drive innovation?' CEPS Special Report, January 2011, available at papers.ssrn.com/sol3/papers.cfm?abstract_id=1756736& accessed 17 January 2018

Enkhardt S 'Germany: Renewables beat coal for the first time' [2018] pv magazine Deutschland

Euroelectric, *Ensuring investments in a Liberalised Electricity Sector*, (Euroelectric, 2004), 53; International Energy Agency, *Power Generation Investment in Electricity Markets* (International Energy Agency, 2003), 12

Fioretti J, 'EU states approve plans for stricter limits on pollutants from power plants' Reuters, <https://www.reuters.com/article/us-eu-coal-pollutants/eu-states-approve-plans-for-stricter-limits-on-pollutants-from-power-plants-idUSKBN17U1ZO> accessed 28 December 2017

Fischer C 'Project-Based Mechanisms for Emissions Reductions: Balancing Trade-offs with Baselines' (2004) Discussion Paper, Resources for the Future

Florysiak D and Vidhan Goyal 'Capital Market Access and Cash Flow Allocation during the Financial Crisis' [2016] Asian Finance Association (AsianFA) 2016 Conference

Pope Francis 'Laudato Si – Care for our common home' [2015] http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

Fouquet D and Jana Viktoria Nysten, 'The Legal Helpdesk Energy Taxation in the EU' Becker, Butner and HeldGammons S, Richard Druce and Peter Davies, 'Assessing the Cost Reflectivity of Alternative TNUoS Methodologies' [2014] NERA Report available at <http://www.nera.com/content/dam/nera/publications/2014/CostReflectivityReport.pdf> Gaventa J, 'Infrastructure networks and the 2030 climate and energy framework' (2013) E3G Working Paper

Gaventa J, Nick Mabey, Sandrine Dixonde-Cleve, Helen Spence-Jackson and Dries Acke, 'EU Energy Union Assessment 2015 –Towards a Resilient Energy Union with a Forward-Looking Climate Policy' Briefing Paper November 2015

Goldthau A and Nick Sitter, 'Soft power with a hard edge: EU policy tools and energy security' (2014) European Policy Brief available at <http://cris.unu.edu/sites/cris.unu.edu/files/GREEN%20Goldthau%20Sitter%20Policy%20Brief%2037.pdf>

Hamilton K, 'Economic co-benefits of reducing CO2 emissions outweigh the cost of mitigation for most big emitters' (2017) LSE Graham Research Institute for Climate Change Working Paper

Hamilton K, Milan Brahnobhatt and Jiemei Lui 'Multiple Benefits from Climate Change Mitigation' (2017) LSE Graham Research Institute for Climate Change Working Paper

Harvey F 'The Kyoto Protocol is not quite dead' (2012) <http://www.theguardian.com/environment/2012/nov/26/kyoto-protocol-not-dead> (accessed 3 September 2015)

Harvey F 'Paris climate change agreement: the world's greatest diplomatic success' The Guardian (14 December 2015) <https://www.theguardian.com/environment/2015/dec/13/paris-climate-deal-cop-diplomacy-developing-united-nations> accessed 8 October 2018

Heinrich M and Phil Hare, 'Outlook for New Coal Fired Power Stations in Germany, The Netherlands and Spain' [2013] Pöyry Management Consulting Report for DECC UK

Helm D, 'Cost of Energy Review', 25 October 2017, Table 12, p. 104 available at http://www.biee.org/wpcms/wp-content/uploads/Cost_of_Energy_Review.pdf

Henriot A, 'Financing Investment in the European Electricity Transmission Network: Consequences on Long-Term Sustainability of the TSOs Financial Structure' (2013) FSR Policy Brief

Holmberg P and Ewa Lazarczyk, 'Congestion management in electricity networks: Nodal, zonal and discriminatory pricing' [2012] Electricity Policy Research Group- Working Paper 1209

Hood C, 'Reviewing existing and proposed emissions trading systems' (2010) OECD/IEA,

Johnston A, 'Recent Renewables Litigation in the UK: Some Interesting Cases' (2015) Oil Gas and Energy Law available at <https://www.ogel.org/article.asp?key=3547>

de Jong F, 'The 2030 Effort Sharing Regulation: How can the EU's largest climate tool spur Europe's low-carbon transition' [2016] Carbon Market Watch Policy Briefing available at https://carbonmarketwatch.org/wp-content/uploads/2016/09/CMW_THE-2030-EFFORT-SHARING-REGULATION_final2016_WEB.pdf accessed 21 May 2018

Kampmark B, 'From Plastic to Drastic' (2018) available <https://www.thenews.com.pk/print/271322-from-plastic-to-drastic>

Karnitschnig M, 'Germany's Expensive Gamble on Renewable Energy' The Wall Street Journal, 26 August 2014 <http://online.wsj.com/articles/germanys-expensive-gamble-on-renewable-energy-1409106602> (accesses 1 September 2016)

Keay M, 'The EU target model for electricity markets: fit for purpose?' [2013] Oxford Institute for Energy Supplies, 2

Klessman C, 'Experience with renewable electricity (RES-E) support schemes in Europe: Current status and recent trends Presentation' (2014) http://www.leonardoenergy.org/sites/leonardo-energy/files/documents-and-links/ecofyssupport_policies_2014_04.pdf (accessed 3 September 2016)

Klessmann C, Erika de Visser, Fabian Wigand, Malte Gephart, Gustav Resch and Sebastian Busch, 'Cooperation between EU member states under the RES Directive. Task 1 Report (2014)', http://ec.europa.eu/energy/renewables/studies/doc/2014_design_features_of_support_schemes_task1.pdf

Kollmuss A, Helge Zink and Clifford Polycarp, "Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards" [2008] Stockholm Environmental Institute Working Paper

Krzeminska J, 'Are Support Schemes for Renewable Energies Compatible with Competition Objectives? An Assessment of National and Community Rules' (2007) 7 Yearbook of European Environmental Law

Laing T, Misato Sato, Michael Grubb and Claudia Comberti, 'Assessing the effectiveness of the EU Emissions Trading Scheme' (January 2013) Grantham Research Institute on Climate Change and the Environment Working Paper No. 106

Lancaster K, 'Confidentiality, anonymity and power relations in elite interviewing: conducting qualitative policy research in a politicised domain' (2017) 20(1) International Journal of Social Research Methodology, 93

Lenaerts K and José Gutiérrez-Fons, 'To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice' [2013] EUI Working Paper AEL 2013/9

Lu Z, ZhaoYang Dong and Penelope Sanderson 'The Efficient Market Hypothesis and Electricity Market Efficiency Test' [2008] Third International Conference on Electric Utility Deregulation and Restructuring and Power Technologies, 436

Mahalingam A and David Reiner, 'Energy subsidies at times of economic crisis: A comparative study and scenario analysis of Italy and Spain', (2016) EPRG Working Paper 1603, Cambridge Working Paper in Economics 1608 – 23 Jan 2016

Marcacci S 'Uneconomic coal could be squeezed out of European Union power markets by 2030' [2018] Energy Post

McHugh-Russell L, 'Qualitative Methods for Law and Society Research—An EUI Research Guide' [2016] University of Edinburgh Working Paper

McLean A, 'The ECJ / Ålands case – Implications for National Renewables Support Systems' [2014] Energy & Resources

McGrane V, 'Trump's Greatest Mission: Erasing Obama's Legacy' 16 December 2017 The Boston Globe; Available at <https://www.bostonglobe.com/news/nation/2017/12/16/trump-greatestmission-erasing-obama-legacy/OA9M4qwS2hHIOj3MGLxGxK/story.html>

Melolinna M, Helen Miller and Srdan Tatomin, 'Business investment, cost of capital and uncertainty in the United Kingdom - evidence from firm-level analysis' (2018) 17 Bank of England Staff Working Paper

Meyer-Ohlendorf N, Benjamin Görlach and Ennid Roberts, 'EU Effort Sharing Decision after 2020: Auctioning of AEAs' (19 January 2016) Ecological Institute, Berlin

Mityakov S and Margarita Portnykh, 'The Infant Industry Argument and Renewable Energy Production' (2012) Marshall Institute Working Paper

Mock V, 'Coal Renaissance Risks Tarnishing the EU's Green-Energy Credentials' 2 Sept 2014 The Wall Street Journal

Neuhoff K and Rodney Boyd 'Technical Aspects of Nodal Pricing' [2011] Climate Policy Initiative Working Paper DIW Berlin

Neuhoff K, Carlos Battle, Gert Brunekreeft, Christos Konstantinidis, Christian Nabe, Giorgia Oggioni, Pablo Rodilla, Sebastian Schwenen, Tomasz Siewierski and Goran Strbac, 'Flexible Short-Term Power Trading: Gathering Experience in EU Countries' (2015). DIW Berlin Discussion Paper No. 1494

Newbury D 'Questioning the EU Target Electricity Model – how should it be adapted to deliver the Trilemma' [2016] Cambridge University, Energy Policy Research Group Working Paper

Pace A, Jo Lord, Tom Edwards and Jonathan Davison, 'A Review of the Embedded Benefits accruing to Distribution Connected Generation in GB' [2016] Cornwall Energy for De-centralised Energy Association

Pachauri R and Andy Reisinger, *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Inter-Governmental Panel on Climate Change 2009)

Parry I, Dirk Heine, Shanjun Li and Eliza Lis, 'Getting Energy Prices Right From Principle to Practice' (2014) International Monetary Fund

DePaulo P, 'How large should the sample size be in a qualitative study?' (2002) DePaulo Research Consulting

Parry I and Herman Vollebergh, 'Reforming the EU Energy Tax Directive: Assessing to Options' (2016) CESIFO Working Paper No 5749, 2

Pye S and Audrey Dobbins, 'Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures' (2015) INSIGHT_- European Commission 7th Framework Programme

Radov D, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

Ryckman C, 'EU Court Allows Discriminatory Green Energy Support Schemes' (2014) National Law Review www.natlawreview.com/article/eu-court-allows-discriminatory-green-energy-support-schemes (accessed 1 April 2016);

Sánchez Graells A, 'CJEU protects discriminatory green energy schemes and keeps inconsistency in EU free movement of goods law (C-573/12)', (2014) <http://howto crackanut.blogspot.no/2014/07/cjeu-protects-discriminatory-green.html> (accessed 10 May 2016)

Schaible C 'New Features under the Industrial Emissions Directive: critical assessment of main provisions under the new IPPC framework' [2011] European Environmental Bureau

de Schoutheete P, 'The Evolution of Intergovernmental Cooperation in the European process', [2006] Challenge Europe, 2, Egmont European Affairs Publication (Working Paper)

Sedjo R and Brent Sohngen, 'Carbon Sequestration in Forests and Soils; (2012) 4 Annual Review of Resource Economics, 127

de Sepibus J, 'The European Emission Trading Scheme Put to the Test of state aid Rules' (2007) NCCR Trade Working Paper 12

Sijm J, Karsten Neuhoff and Yihsu Chen, 'CO₂ Cost Pass Through and Windfall Profits in the Power Sector' (May 2006) 1Energy research Centre of the Netherlands & Energy Policy Research Group 0617, Cambridge University Press

Sijm J, Stefan Bakker, Yishu Chen, Henk Harmsen, and Wietze Lise, 'CO₂ price dynamics: the implications of EU emissions trading for the price of electricity' (2005) ECN-C--05-081, Energy Research Centre of the Netherlands

Staffell I, 'Coal comeback pushes up UK's carbon emissions' [2018] Imperial College London Working Paper

Tagliapietra S, 'Beyond Coal: Facilitating the Transition in Europe' (2017) 5 Bruegel Institute Policy Brief

Wagner U, Mirabelle Muûls, Ralph Martin and Jonathan Colmer, 'An evaluation of the impact of the EU emissions trading system on the industrial sector. Plant-level evidence from France' (6 June 2015) AERE Conference, Canada

Woerdman E and A Nentjes, 'The European Union Emissions Trading Hybrid: Inefficiencies in the Revised Rules After 2013', University of Groningen working paper series

The World Bank Group-Multilateral Investment Guarantee Agency, *World Investment & Political Risk* (The World Bank Group, 2009) 28

Ydersbond I M and Thea Sveen, 'The Aland Case and the Future of Renewables in Europe'. Energi Klima. Available at www.energiogklima.no/kommentar/the-aland-case-and-the-future-of-renewables-in-europe. Accessed on 26 April, 2016

Online & Other Miscellaneous Sources

ACER - Agency for the Cooperation of Energy Regulators - <https://www.acer.europa.eu/en/Pages/default.aspx> accessed 16 July 2018

Baker McKenzie 'The Rise of Corporate PPAs; A New Driver for Renewables' [2018] <https://www.bakermckenzie.com/-/media/...corporate-ppas/rise/corporateppas.pdf?>

Balancing & Settlement Code https://www.elexon.co.uk/wp-content/uploads/2018/04/GB_BSC.pdf accessed 17 July 2018

Bayer E, 'Report on the German power system' (2015) Agora Energiewende, 25 available at https://www.agora-energiewende.de/fileadmin/downloads/publikationen/CountryProfiles/Agora_CP_Germany_web.pdf accessed 23 January 2018

Bird & Bird 'Corporate PPAs: An International Perspective' [2017] <https://www.twobirds.com/~media/articles/international-corporate-ppas-brochure.pdf?la=en>

Bloomberg 'Poland Faces Harsh EU Reality in Push for Coal Exemptions', 17 May 2017, available at www.bloomberg.com/news/articles/2017-05-16/poland-faces-harsh-eu-reality-in-its-push-for-coalexemptions accessed 20 January 2018

Booz & Co 'Study on the benefits of an integrated European energy market' [2013] available at https://ec.europa.eu/energy/sites/ener/files/documents/20130902_energy_integration_benefits.pdf accessed 28 October 2017

CEER, 'Implications of non-harmonised renewable support schemes' (June 2012), available at: http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/Tab/C12-SDE-25-04b_SDE%20NHSS-Conclusions_18-Jun-2012.pdf, at 14 accessed 15 September 2016

CMS 'Unlocking the Corporate PPA Market' [2018] <https://cms.law/en/GBR/Events/Breakfast-Seminar-Unlocking-the-Corporate-PPAs-Market>

<https://www.conserve-energy-future.com/causes-and-effects-of-acid-rain.php>

Deep Decarbonization Pathways Project (DDPP) (2015), "Pathways to deep decarbonisation", Sustainable Development Solutions Network & the Institute for Sustainable Development & International Relations, http://deepdecarbonization.org/wpcontent/uploads/2016/03/DDPP_2015_REPORT.pdf accessed 5 April 2016

DLA Piper 'Corporate Power Purchase Agreements (PPAs): What are they?' [2016]
<https://www.dlapiper.com/en/uk/insights/publications/2016/06/renewable-energy-global-paper/what-are-corporate-power-purchase-agreements-ppa/>;

DW 'Pressure on Germany to ditch coal intensifies', 2 October 2017 available at www.dw.com/en/pressure-on-germany-to-ditch-coal-intensifies/a-40778356

Economist 'Getting Warmer' The Economist, 3 December, 2009, available (subscription required) at:
http://www.economist.com/specialreports/displaystory.cfm?story_id=E1_TQJJQRSN assessed 15 September 2015

Electricity Consumption by EU member state https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Electricity_consumption_and_trade,_GWh,_2016_new.png

EDF Partners for Wind Farm Equity <https://www.edfenergy.com/media-centre/news-releases/edf-renewables-signs-new-partnership-twenty-four-uk-wind-farms>

EEA 'Energy subsidies in the European Union: A brief overview' [2010] Technical Report 1/2004 available at https://www.eea.europa.eu/publications/technical_report_2004_1 accessed 20 October 2016

Energiekontor AG company press release 31 August 2018 – available at https://www.energiekontor.co.uk/news/accessed_31_August_2018

Energy Efficiency Watch 'Good practice ways out of energy debt' Available at www.energy-efficiency-watch.org/fileadmin/eew_documents/Documents/EEW2/Good_practice_ways_out_of_energy_debt_BROCHURE.pdf

EURELECTRIC Secretary General Hans ten Berge <http://www.eurelectric.org/news/2014/efforts-towards-europeanisation-of-res-policies-remain-crucial,-eurelectric-reaffirms/>

European Centre for Development Management and Policy, 'Evaluation Study on the EU Institutions & member states' Mechanisms for Promoting Policy Coherence for Development. Final Report', May 2007

European Federation of Energy Traders 'Towards a single European energy market' (2012), 15 available at <http://www.efet.org/Files/Documents/Energy%20Background/Highlights-II-Final.pdf> accessed 30 March 20

European Commission, 'Climate change: Progress report shows EU on track to meet or over-achieve Kyoto emissions target,' press release, Brussels, November 12, 2009, available at europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1703&format=HTML&aged=0&language=EN&guiLanguage=en accessed 17 January 2017

EU Commission 'EU ETS Handbook' (2015), 43 available at https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf accessed 21 December 2017

EU Commission Strategy on Single Use Plastic - https://ec.europa.eu/commission/news/single-use-plastics-2018-may-28_en accessed 1 July 2018

European Electricity Trading Hub - https://www.epexspot.com/en/press-edia/press/details/press/European_Cross-Border_Intraday_XBID_Solution_and_10_Local_Implementation_Projects_confirm_go-live_date_for_June_2018 accessed 30 May 2018

Euroelectric, *Ensuring investments in a Liberalised Electricity Sector*, (Euroelectric, 2004), 53; International Energy Agency, *Power Generation Investment in Electricity Markets* (International Energy Agency, 2003), 12

Eurostat 'Europe 2020 indicators - climate change and energy' (2016), available at http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators-climate_change_and_energy accessed 10 January 2016

EurActiv.com, 'Hollande calls for EU 'harmonization' on renewable energy', <http://www.euractiv.com/energy/hollande-calls-eu-harmonization-news-519965>

European Communities, (No. 10, 1972), 'Meeting of the Heads of State or Government – Paris 19-21 October 1972 - The First Summit Conference of the Enlarged Community - Official Communiqué

EU Comm 'Fifth European Community Environment Programme: Towards Sustainability' available at <http://europa.eu/scadplus/leg/en/lvb/128062.htm>

EU Comm 'Sixth Environment Action Programme, Environment 2010: Our future, Our Choice', available at <http://europa.eu.int/comm/environment/newprg>

Fuel Poverty: a framework for future action' (2013) Department of Energy & Climate Change

Gestore Mercati Energetici, 'About Green certificates' available www.mercatoelettrico.org/en/mercati/cv/CosaSonoCv.aspx accessed 25 January 2016

H.E. Judge Gilbert Guillaume, President of the International Court of Justice, Speech to the General Assembly of the United Nations (30 Oct. 2001), <http://www.icj-cij.org/files/press-releases/5/2995.pdf> accessed 10 March 2019

Hall B, 'Steady as she goes: the rise of the Corporate PPA' [2018] Energy Perspectives Cornwall Consulting Market Report 24 September 2018

Hornsea Offshore Windfarm Supply Chain Commitments <https://www.gov.uk/government/publications/contracts-for-difference-2nd-allocation-round-supply-chain-plans-for-projects-over-300mw-which-secured-contracts-2017>

Hyman M, 'The Future Revenue Stack Driving Value in an Uncertain Future' [2019] Smartest Energy available at <https://www.smartestenergy.com/info-hub/reports-and-guides/the-future-revenue-stack/>

<https://www.investopedia.com> – various definitions of trading terms

Intergovernmental Panel on Climate Change 'Report Prepared for IPCC by Working Group 1' Intergovernmental Panel on Climate Change (IPCC) -; Also known as John Houghton, Gareth Jenkins and J Ephraums (Eds.), *Climate Change: The IPCC Scientific Assessment*, (Cambridge University Press, 1990), available www.ipcc.ch/ipcreports/far/wg_i/ipcc_far_wg_i_full_report.pdf

Intergovernmental Panel on Climate Change Special Report 'Global Warming of 1.5 °C an IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways' 48th Session of the IPCC, Incheon, Republic of Korea, 6 October 2018 available at <http://www.ipcc.ch/report/sr15/> Accessed 8 October 2018

Levelised Cost of Energy (LCOE), https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_2017_Power_Costs_2018.pdf accessed 16 July 2018

Magic Circle Law Firms UK - <https://www.lawgazette.co.uk/news/its-a-kind-of-magic/42082.fullarticle>

Mokkas S and Karen Mayor, 'Electricity Capacity Assessment: Measuring and modelling the risk of supply shortfalls' (2011) Office of gas and electricity markets (Ofgem) <https://www.ofgem.gov.uk/ofgem-publications/40421/capacityassessmentconsultationdocument.pdf> accessed 29 April 2018

Monopolies and Mergers Commission, 'Central Electricity Generating Board: A Report on the Operation by the Board of its System for the Generation and Supply of Electricity in Bulk' (1981) HC 315, HMSO, London

Mott Macdonald 'Impact Assessment on European Electricity Balancing Market' [2013] EC DG ENER/B2/524/2011

EU electricity exchange pricing and time series <https://business.nasdaq.com/trade/commodities/products/power-derivatives/UK-power.html>

Nicolaides P, 'Public Procurement and State Aid' [2018] State Aid Hub <http://stateaidhub.eu/blogs/stateaiduncovered/post/9299>

Norton Rose Fulbright 'Corporate renewable PPAs – a framework for the future?' [2017] <http://www.nortonrosefulbright.com/knowledge/publications/149117/corporate-renewable-ppas-a-framework-for-the-future>

OECD Report 'Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative' [2010] Prepared for submission to the G-20 Summit Meeting Toronto (Canada), 26-27 June 2010 available at <https://www.oecd.org/env/45575666.pdf> Accessed 20 October 2016

Ofgem 'The Decarbonisation of Heat' [2016] 3 available at https://www.ofgem.gov.uk/system/files/docs/2016/11/ofgem_future_insights_programme_-_the_decarbonisation_of_heat.pdf accessed 1 September 2018

Offshore transmission operator - OFTO - <https://www.ofgem.gov.uk/ofgem-publications/85943/offshoretransmission-aninvestorperspective-updatereport.pdf> accessed 25 June 2018

<https://www.ofgem.gov.uk/gas/wholesale-market/market-efficiency-review-and-reform/cash-out-arrangements> accessed 31 August 2018

Offshore Wind Tariff Reductions France - <https://www.offshorewind.biz/2018/06/20/france-reduces-feed-in-tariffs-for-6-offshore-wind-projects/>

Organisation for Economic Co-operation and Development 'The polluter-pays principle: OECD analyses and recommendations' (1992) Doc. OCDE/GD (92) 81

http://www.powerplantccs.com/ref/glos/combined_cycle_gas_turbine_ccgt_.html

Pricewaterhousecooper 'glossary of oil and gas, utilities and mining commodity trading and risk management terms' 2008 <https://www.pwc.com/gx/en/energy-utilities-mining/pdf/eumcommoditiestradingriskmanagementglossary.pdf>

Patent Applications for Renewable Technology http://www.ren21.net/spotlight/topical-reports/REN21_10yr.pdf accessed 5 October 2018

Renewable Energy CS International <http://www.recs.org/news/european-court-of-justice-rules-against-the-advocate-general-s-opinion-in-aland-vindkraft-case>

<http://www.rwe.com/web/cms/en/403722/rwe/press-news/how-the-electricity-price-is-determined>

Roques F, 'European Electricity Markets in Crisis: Diagnostic and Way Forward' (2013) Mission du Commissariat Général à la Stratégie et à la Prospective available at http://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/Roques_CGSPReport_12November20131.pdf accessed 27 April 2018

Rottgen N (German Environment Minister) 'The Federal Government's energy concept of 2010 and the transformation of the energy system of 2011'

Ryckman C, 'EU Court Allows Discriminatory Green Energy Support Schemes', (2014) National Law Review <http://www.natlawreview.com/article/eu-court-allows-discriminatory-green-energy-support-schemes> (accessed 1 April 2016)

Sánchez Graells A, 'CJEU protects discriminatory green energy schemes and keeps inconsistency in EU free movement of goods law (C-573/12), (2014) <http://howtocrackanut.blogspot.no/2014/07/cjeu-protects-discriminatory-green.html> (accessed 10 May 2016)

Saylor Academy Paper available at <https://www.saylor.org/site/wp-content/uploads/2011/05/Treaty-of-Lisbon.pdf> accessed 15 September 2015

Schulz S and Julian Schwartzkopff, 'G7 Coal Phase Out Germany' [(2015) available https://www.e3g.org/docs/Germany_G7_coal_analysis_September_2015.pdf accessed 2 October 2018

Science for Environment Policy 'The Precautionary Principle: decision making under uncertainty' (2017) Future Brief 18. Produced for the European Commission DG Environment by the Science Communication Unit, UWE, Bristol

Seppälä S-M, 'Renewable Energy Tenders are Won by Well-Planned Projects' [2018] Castrén & Snellman available at <https://www.castrén.fi/blogandnews/news-2018/renewable-energy-tenders-are-won-by-well-planned-projects/> accessed 25 October 2018

Serbia – Italy Electricity Source Recognition Agreement - <http://www.balkaninsight.com/en/article/serbia-italy-sign-energy-deal>

<https://sociolegaldcu.wordpress.com/what-is-socio-legal-research>

State of California Department of Justice Office of the Attorney General, <https://oag.ca.gov/tobacco/msa> (accessed 5 September 2016)

Switzerland & EU Free Trade Agreement, 22 July 1972 OJ L 300, 31/12/1972 available at http://trade.ec.europa.eu/doclib/docs/2007/january/tradoc_133045.pdf accessed 20 August 2018

Spaak Report - Paul-Henri Spaak, 'Intergovernmental Committee on European Integration. The Brussels Report on the General Common Market (abridged, English translation of document commonly called the Spaak Report) (June 1956) Information Service High Authority of The European Community for Coal and Steel

Stern N, 'Stern Review: The economics of climate change', (2006), Report presented to the UK Prime Minister and the Chancellor of the Exchequer on the Economics of Climate Change - available at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm accessed 27 Sept 2017

Thematic Review on Risk Governance - http://www.fsb.org/wp-content/uploads/r_130212.pdf accessed 21 July 2018

Van der Wee M (Head of Unit International Relations DG Competition), 'State Aid and the Distortion of Competition' 2011, 3 available at http://ec.europa.eu/competition/speeches/text/sp2011_17_en.pdf accessed 1 March 2018

<https://corporate.vattenfall.com/about-energy/energy-markets/> (Definition of traded markets in Electricity)

UK Electricity Demand - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/736152/Ch5.pdf accessed 3 October 2018

UK Interconnector Capacity - NSL (Norway) 1,400MW, FAB Link (France) 1,400MW, IFA2 (France) 1,000MW, Viking (Denmark) 1,400MW and Greenlink (Ireland) 500MW - https://www.ofgem.gov.uk/system/files/docs/2018/10/w1_fpa_update_letter.pdf accessed 3 October 2018

US Canada Power System Outage Task Force <https://digital.library.unt.edu/ark:/67531/metadc26005/> accessed 1 September 2018

Victor D, 'The Politics of Fossil-Fuel Subsidies' [2009] Available at <https://ssrn.com/abstract=1520984> accessed 20 October 2016

Vorrath S, 'Will Munich be the world's first 'megacity' to reach 100% renewables?' [2014] Renewable Economy available from <https://reneweconomy.com.au/will-munich-be-worlds-first-megacity-to-reach-100-renewables-28292/>

Watson F, 'EC CO2 data shows that EU carbon trading is working: analysts' (2011) Platts, available at platts.com/NewsFeature/2011/emissionsdata/index

World Bank Group-Multilateral Investment Guarantee Agency, *World Investment & Political Risk* (The World Bank Group, 2009),

World Commission of Environment and Development (WCED), *Our Common Future*, Chapter 2: Towards Sustainable Development available at <http://www.un-documents.net/ocf-02.htm#IV>

Young M, 'Fragmentation' Oxford Bibliographies available at <http://www.oxfordbibliographies.com/view/document/obo-9780199796953/obo-9780199796953-0113.xml> accessed 12 March 2019

Annex 1

A1.1 Sustainability

Building on the goal of carbon emissions reduction from electricity generation the EU uses the concept of ‘sustainability’ as one of the principles upon which the renewables regulatory framework is built.

Initially, the EU took inspiration from the definition of sustainability in the Brundtland Report,²⁰⁸⁴ which sought to reconcile the energy needs of present and future generations to find intergenerational equity²⁰⁸⁵ in energy usage. The Brundtland report suggests a reduction in current energy usage to leave a legacy of energy sources for future generations rather than a change to energy technology. This could reflect the date of the report (1987) in that coal was still readily available in many countries²⁰⁸⁶ and renewable electricity generation technology was in its infancy.²⁰⁸⁷

Although not defined in the TFEU, sustainable development is an umbrella concept²⁰⁸⁸ with no hierarchy of objectives within this umbrella.²⁰⁸⁹ It has been stated that ‘sustainability’ needs supporting principles²⁰⁹⁰ such as the precautionary principle, ‘polluter pays’ and the principle of integration.²⁰⁹¹

The EU seems to use the concept of sustainability in the renewable electricity context to mean the environmental impact of the energy source, rather than the need

²⁰⁸⁴ World Commission on Environment & Development, ‘Our Common Future’, 4 August 1987, UN, GA res, A/42/427 (1987), Chapter 2, para 1

²⁰⁸⁵ Erling Holden, Kristin Linnerud, David Banister, Valeria Jana Schwanitz and August Wierling *The Imperatives of Sustainable Development: Needs, Justice, Limits* (Routledge, 2017); See Also Edith Brown Weiss, ‘Intergenerational equity: a legal framework for global environmental change’ in Edith Brown Weiss (ed) *Environmental change and international law: New challenges and dimensions* (United Nations University Press, 1992)

²⁰⁸⁶ John Gillingham, *Coal, Steel, and the Rebirth of Europe 1945-1955* (Cambridge University Press, 1991); see also Richard Gordon, *The Evolution of Energy Policy in Western Europe: the Reluctant Retreat From Coal* (Praeger Publishers, 1970); Ernst Haas *The Uniting of Europe: Political, Economic and Social Forces 1950-1957* (Stanford University Press, 1958)

²⁰⁸⁷ Sergey Mityakov and Margarita Portnykh, ‘The Infant Industry Argument and Renewable Energy Production’ (2012) Marshall Institute Working Paper; The maturing nature of the technology can be illustrated by the number of patent applications in 1994 were a few tens per year, rising to broadly 12,200 in 2011 and as the technology matures decreasing to 6,500 in 2015 - http://www.ren21.net/spotlight/topical-reports/REN21_10yr.pdf accessed 5 October 2018

²⁰⁸⁸ Jaye Ellis, ‘Sustainable Development as a Legal Principle: A Rhetorical Analysis’ (2008) available at www.scribd.com/doc/51448971/Sustainable-Development-as-a-Legal-Principle-A-Rhetorical-Analysis, accessed 1 June 2017

²⁰⁸⁹ Ibid, 13; See also David Hodas, ‘The Role of Law in Defining Sustainable Development: NEPA Reconsidered’ (1998) 3 Widener Law Symposium, 1, 6

²⁰⁹⁰ John Danaher, ‘Protecting the Future or Compromising the Present? Sustainable Development and the Law’ (2006) 14 IS Law Review, 117, 119-120

²⁰⁹¹ J Verschuuren, ‘Sustainable Development and the Nature of Environmental Legal Principles’ (2006) (1) 9 Potschefstroom Electricity Law Journal, 17

to meet current and future energy requirements as in the Brundtland Report.²⁰⁹² Therefore, the EU uses ‘sustainability’ as an environmental concept relating to carbon emissions reductions rather than energy legacy considerations. The only element of the EU’s renewables regulatory framework that is directly aligned to the Brundtland Report is the Energy Efficiency Directive²⁰⁹³ which seeks to reduce present day demand.

Market operators, on the other hand, seem to use ‘sustainability’ in a regulatory uncertainty context relating to regulatory change. This being a theme brought out during the empirical research phase.²⁰⁹⁴

A1.2 Precautionary Principle

The precautionary principle²⁰⁹⁵ is core to the management of risk from events and actions and again is within the sustainability limb of the EU’s energy and environmental policy in so far as it seeks to reduce carbon emissions.

Within EU law the precautionary principle is subsidiary to sustainability. The EU defined the ‘precautionary principle’ in its communication on the subject²⁰⁹⁶ as the ‘*reasonable grounds that an event or process was potentially dangerous to the environment*’. The precautionary principle therefore considers the long-run effects of a decision and the well-being of future generations, similar to the Brundtland Report.²⁰⁹⁷ The EU states that the precautionary principle seeks to balance the dilemma of freedoms and rights with the need to reduce the risk of adverse effects on the environment of energy use, and as such in its application it should be proportionate, non-discriminatory, transparent and coherent, with a structured decision-making process based on scientific and other objective information.²⁰⁹⁸

The precautionary principle is mentioned only once within the Treaty in Article 191(2) TFEU, although it can be considered a legally binding principle.²⁰⁹⁹

²⁰⁹² World Commission on Environment & Development, ‘Our Common Future’, 4 August 1987, UN, GA res, A/42/427 (1987)

²⁰⁹³ Council Directive 2012/27/EU 25 October 2012 – Energy Efficiency Directive OJ L315/1

²⁰⁹⁴ Ricardo Barcelona *Energy Investments: An Adaptive Approach to Profiting from Uncertainties* (Palgrave Macmillan, 2017)

²⁰⁹⁵ Miriam Haritz ‘Liability with and liability from the precautionary principle in climate change cases’ in Michael Faure and Marjan Peeters (eds) *Climate Change Liability* (Elgar, 2011)

²⁰⁹⁶ Commission Communication COM(2000) on the Precautionary Principle available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52000DC0001> accessed

²⁰⁹⁷ World Commission on Environment & Development, ‘Our Common Future’, 4 August 1987, UN, GA res, A/42/427 (1987), Chapter 2, para 1

²⁰⁹⁸ Ibid, para 1

²⁰⁹⁹ Peter-Tobias Stoll, Wybe Douma, Nicolas de Sadeleer and Patrick Abel, ‘CETA, TTIP and the EU precautionary principle. Legal analysis of selected parts of the draft CETA agreement and the EU TTIP proposals’ (2016) 4 Jean Monnet Working Paper Series

Despite this single mention within the TFEU, the principle's scope is far reaching covering circumstances where scientific evidence is insufficient, inconclusive or uncertain. The CJEU has granted EU institutions a margin of discretion in implementing the principle, when it stated in *MAFF Exp NFU*²¹⁰⁰

Where there is uncertainty as to the existence or extent of risks to human health, the institutions may take protective measures without having to wait until the reality and seriousness of those risks become fully apparent.

The EU is therefore seen to be acting upon the precautionary principle in the implementation of the renewables regulatory framework as it has not waited for the case for climate change to be proven conclusively before taking action but has acted in a preventative manner.

A1.3 Polluter Pays Principle

Another key supporting principle of sustainability is that the 'polluter should pay' and therefore it is included within the first limb of the EU's environmental and energy objectives. Article 191(2) TFEU states '*environmental damage should as a priority be rectified at source and that the polluter should pay*'.

The 'polluter pays' principle relates to the allocation of costs and responsibilities for environmental pollution, implying the costs of environmental protection should be borne by the polluter; potentially, its interpretation can be extended to include the costs of measures to rectify or compensate for environmental damage.²¹⁰¹

The 'polluter pays' principle has two origins. The first is the so called 'no-harm rule' such that the right of a sovereign state to use its resources is curtailed by the need to prevent environmental harm to its neighbours (based on the *Trail Smelter Arbitration*).²¹⁰² The second is stems from the economic theory of the 'internalisation of externalities', imposing on polluters the costs of inspecting, monitoring and controlling pollution, rather than such costs being borne by the

²¹⁰⁰ Case C-157/96 *R v Ministry of Agriculture Fisheries & Food (MAFF) Exp NFU* ECLI:EU:C:1998:191, para 63

²¹⁰¹ For an analysis of the principle see Nicolas de Sadeleer *Environmental Principles. From Political Slogans to Legal Rules* (Oxford University Press, 2002)

²¹⁰² *Trail Smelter Arbitration (United States v Canada)* Arbitral Tribunal 3 UN Report of International Arbitration Awards 1905 (1941)); See also Rebecca Bratspies and Russell Miller *Transboundary Harm in International Law: Lessons from the Trail Smelter Arbitration* (Cambridge University Press, 2009)

state.²¹⁰³ The OECD defined the principle in 1992 as the polluter should bear the ‘costs of pollution prevention and control measures’.²¹⁰⁴

Moreover, the Commission subsequently stated in *Georgsmarienhütte* that ‘the responsibility of the polluter is in principle an obligation to act and not simply to pay’.²¹⁰⁵

The ‘polluter pays’ principle is highly intertwined with a principle of ‘proximity’, such that wherever possible, environmental damage should be ‘rectified at source’ (also Article 191(2) TFEU).²¹⁰⁶

The ‘polluter pays’ principle is one of the main drivers behind the implementation of the Emissions Trading Directive (See Directive Recital 1)²¹⁰⁷ and the Industrial Emissions Directive²¹⁰⁸ (See Recital 2 and 25). The conflict between these two Directives and Article 191(2) TFEU is that the Directives allow the emission of greenhouse gases, whereas the ‘polluter pays’ principle, as drafted in TFEU, implies an absolute obligation to rectify emissions at source²¹⁰⁹ on the basis that the polluter should pay (confirmed in *Raffinerie Mediterranée*).²¹¹⁰

²¹⁰³ Kleoniki Pouikli, ‘The Polluter Pays Principle and the EU State Aid Law for Environmental Protection’ (2016) 55 Journal of Law, Policy and Globalisation, 19, 20

²¹⁰⁴ Organisation for Economic Co-operation and Development ‘The polluter-pays principle: OECD analyses and recommendations’ (1992) Doc. OCDE/GD (92) 81; See Also *Pulp Mills on the River Uruguay, Argentina v Uruguay*, International Court of Justice (2006) Rep 113 – See Also Plato on the principle ‘If anyone intentionally spoils the water of another . . . let him not only pay damages, but purify the stream or cistern which contains the water’ - B Jowett *The Dialogues of Plato: The Laws*, (vol. 4 Clarendon Press, 1953), 485

²¹⁰⁵ Commission Decision 1999/227/ECSC *Georgsmarienhütte* OJ L83/72, part VI

²¹⁰⁶ Ian Bailey *New Environmental Policy Instruments in the European Union Politics, Economics, and the Implementation of the Packaging Waste Directive* (Taylor & Francis, 2003)

²¹⁰⁷ Council Directive 2003/87 13 October 2003 Establishing a scheme for carbon emission trading allowance trading within the Community OJ L L 275, 25.10.2003 the Directive was amended by Directive 2009/29 ‘To improve and extend the carbon emission trading scheme of the Community’ OJ L140/63

²¹⁰⁸ Council Directive (EC) 2010/75/EC 24 November 2010 – Industrial Emissions (integrated pollution prevention and control) OJ L334/17 (Industrial Emission Directive)

²¹⁰⁹ G Winter, ‘The legal nature of environmental principles in international, EC and German law’ in R Macrory (ed.) *Principles of European Environmental Law* (Europa Law Publishing, 2004), 19

²¹¹⁰ Case C-378/08 *Raffinerie Mediterranée (ERG) SpA, Polimeri Europa SpA and Syndial SpA v Ministero dello Sviluppo economico and Others* ECLI:EU:C:2010:126, para 46

Annex 2 – Introduction to Legal Theory

This Annex sets out an introduction to the debate and difference between legal positivism²¹¹¹ and the view of law as a branch of political morality²¹¹² or natural law.²¹¹³

According to positivism, law is a normative set of rules²¹¹⁴ and is a matter of what has been posited (ordered, decided, practiced, tolerated, etc.); in other words, a social construction. Human society has a social order, a means of regulating behaviour, deterring anti-social behaviour, and resolving disputes. The theory is also reductivist,²¹¹⁵ maintaining that normative language used in describing and stating the law (authority, rights, obligations, liabilities and so on) can be analysed without the need for non-normative and concatenations of terms regarding power and obedience. Positivism is considered to stem from a political system²¹¹⁶ with a sovereign leader or 'juridical power'.²¹¹⁷ It is stated that the authority of law is held in the fact that it is a social rule that it is practiced, with primary and secondary rules.²¹¹⁸ The positivist theory separates the existence of law as a normative set of rules from moral ideals.²¹¹⁹

The countervailing view is that legal positivism fails to give law its moral basis. Accordingly, positivism's opponents state that the driving feature of law is not as a source-based system, but in its capacity to advance the common good.²¹²⁰ Furthermore, the counterbalancing view to positivism would submit that there cannot be any general theory of the existence and content of law; it being denied that local theories of particular legal systems can identify law without recourse to its merits, deciding legal issues as they ought to be decided.²¹²¹

Inclusivists, however, would claim that moral considerations are part of the law because legal instruments make it so, and thus Dworkin is right that the existence and content of law turns on its merits, and wrong only in his explanation

²¹¹¹ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983)

²¹¹² Lon Fuller, 'Positivism and Fidelity to Law: a Reply to Professor Hart' (1958) 71 Harvard Law Review, 630; See also Lon Fuller *The Morality of Law* (Yale University Press, 1969)

²¹¹³ Ronald Dworkin *Taking Rights Seriously* (Harvard University Press, 1978)

²¹¹⁴ Hans Kelsen *General Theory of Law and State* (Russell and Russell, 1945)

²¹¹⁵ Jean d'Aspremont, 'Reductionist Legal Positivism in International Law' [2012] Proceedings of the 106th Annual Meeting of the American Society of International Law

²¹¹⁶ Hans Morgenthau, 'Positivism, Functionalism, and International Law' in Gerry Simpson (ed) *The Nature of International Law* (Routledge, 2017)

²¹¹⁷ Nick Fox, 'Foucault, Foucauldians and Sociology' (1998) 49(3) *The British Journal of Sociology*, 415

²¹¹⁸ Herbert L A Hart *The Concept of Law* (ed) Penelope Bulloch and Joseph Raz (Clarendon Press, 1994)

²¹¹⁹ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983)

²¹²⁰ Lon Fuller, 'Positivism and Fidelity to Law: a Reply to Professor Hart' (1958) 71 Harvard Law Review, 630; See also Lon Fuller *The Morality of Law* (Yale University Press, 1969)

²¹²¹ Ronald Dworkin *Taking Rights Seriously* (Harvard University Press, 1978)

of this fact.²¹²² Such legal theory would suggest that law is an open normative system: adopting and including a series of other elements, including moral and commercial norms and the rules of social groups.²¹²³

Additionally, it is said that judges in exercising moral judgment in the penumbra of legal rules in effect 'revise our concept of what a legal rule is'.²¹²⁴

²¹²² Matthew Kramer, 'How Moral Principles Can Enter Into The Law' (2000) 6(1) Legal Theory, 83

²¹²³ Joseph Raz *Practical Reason and Norms* (Princeton University Press, 1975), 152-154

²¹²⁴ Herbert L A Hart, 'Positivism and the Separation of Law and Morals' (1958) 71 Harvard Law Review, in H L A Hart (ed) *Essays in Jurisprudence and Philosophy* (Clarendon Press, 1983), 72

Annex 3 – Practical Operation of the Electricity Market

A3.1 Introduction

The owners and operators of electricity generating facilities, be they renewable or otherwise, go through the same market processes to get their ‘product’ (electricity) to consumers. Therefore, to understand the regulatory framework (Chapter 2) and the basis of comments made during empirical phase (Chapter 4), an outline of the market processes is set out in this chapter.

The market values ‘*predictability*’ of outcome, of electricity generated (supply side volume), of demand for electricity (buy side volume) and of price.²¹²⁵ The market therefore ‘punishes’ any deviations from the predicted outcome, via a process called imbalance settlement (See Section A3.4).²¹²⁶

Across the EU electricity is traded in a series of national markets which allow the electricity produced to be variously transmitted and distributed to end consumers. In addition to these national markets, developed within the competence²¹²⁷ of the member states, are a series of cross border exchanges where electricity which is produced more than national need can be sold to other member states which have produced insufficient electricity in that instant.

This chapter gives an overview of the operation of the EU’s many electricity markets so that a better understanding can be gained of the regulatory framework surrounding renewable electricity.

A3.2 Inability to Store Electricity on a Meaningful Scale

Electricity is a type of ‘goods’²¹²⁸ that is difficult and expensive to store on a scale suitable for the needs of a transmission system and thus the electricity needed in an

²¹²⁵ Lars Dannecker *Energy Time Series Forecasting Efficient and Accurate Forecasting of Evolving Time Series from the Energy Domain* (Springer, 2015) 11

²¹²⁶ Simon Pezzutto, Gianluca Grilli, Stefano Zambotti and Stefan Dunjic, ‘Forecasting Electricity Market Price for End Users in EU28 until 2020—Main Factors of Influence’ (2018) 11 *Energies*; See also Friedemann Polzin, Michael Migendt, Florian Täube, Paschen von Flotow, ‘Public policy influence on renewable energy investments—A panel data study across OECD countries’ (2015) 80 *Energy Policy* 98

²¹²⁷ Competence is the ability to act in a certain field. The Commission, as the executive of the EU, only acts to the extent allowed by the Treaty. Energy and the environment are shared competences between the EU and member states (Article 4 TFEU). The exercise of competences is subject to two principles (Article 5 of the Treaty on EU) – proportionality (the content and scope of actions may not go beyond what is necessary to achieve the objectives of the Treaties) and subsidiarity (in the area of its non-exclusive competences, the EU may act only if, and in so far as, the objective of an action cannot be sufficiently achieved by the EU countries, hence better achieved at EU level) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aai0020> accessed 1 March 2018; See Also Kim Talus and Pami Aalto, ‘Competences in EU energy policy’ in Rafael Leal-Arcas and Jan Wouters (eds) *Research Handbook on EU Energy Law and Policy* (Elgar, 2017)

²¹²⁸ Case C393/92 *Gemeente Almelo v NV Energiebedrijf IJsselmij* ECLI:EU:C:1994:171, para 28 also Case 157/94 *Commission v Netherlands* ECLI:EU:C:1997:499

instant must be produced in that instant. This feature of electricity is core to the understanding of the need to balance flows and thus the market structure is about achieving a balance at the point and time of delivery.

A3.3 The Electricity Grid – Transmission and Distribution Networks

The electricity grid is an interconnected network of overhead lines, cables, other plant and apparatus connecting electricity generators and consumers. The network is divided into transmission²¹²⁹ and distribution networks,²¹³⁰ usually by voltage, with the lower voltage networks being designated as the distribution network.

Electricity networks throughout the EU operate based on what is known as alternating current.²¹³¹ This allows the voltage of the electricity to be increased and current decreased without a reduction in the power²¹³² transmitted via a process known as transformation. The transformation of alternating current into a high voltage low current form of electricity reduces the electricity's transport losses.²¹³³

All electricity networks have two technical properties, which dictate how electricity markets operate in practice: (i) the need to balance generation and demand, and (ii) The flow of electricity in a grid can only be controlled by reconfiguring the network (switching in or out certain circuits), electricity simply follows via the path of least resistance, so that consumers receive electricity from mixed sources. Once on the grid one electron is the same as another, you cannot tell at the consumer's premises the source of the electricity.

The illustration below sets out this arrangement schematically.

²¹²⁹ A network of electricity cables, overhead lines and other apparatus and plant operating at a voltage above 132kV. It is the network most readily associated with the bulk transport of electricity

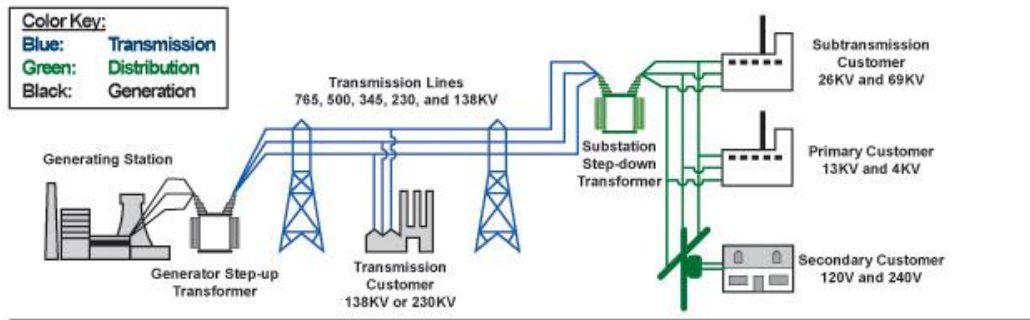
²¹³⁰ A network of electricity cables, overhead lines and other apparatus and plant operating at a voltage of 132kV and below. It is the network most readily associated with the supply of electricity to consumers

²¹³¹ Alternating Current (AC) is a type of electrical current, in which the direction of the flow of electrons switches back and forth at regular intervals or cycles. Current flowing in power lines and normal household electricity that comes from a wall outlet is alternating current - <https://www.greenfacts.org/glossary/abc/alternating-current.htm> accessed 20 September 2018

²¹³² Power being the amount of energy transferred per unit of time. Rather than an informal use of the word to mean electricity

²¹³³ Transport losses are caused by the electrical resistance of the network, even although this is minimised due to the design of the network and the material used within the plant forming the network, however, it is not practical to reduce this to zero, and is directly correlated to the square of the current, thus reducing the current by increasing the voltage further reduced losses.

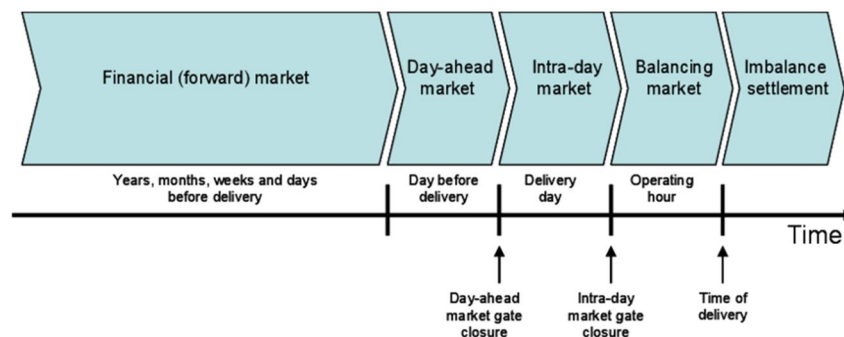
Basic Structure of the Electricity Distribution System



Source: US-Canada Power System Outage Task Force

A3.4 Operation of Electricity Markets

The electricity market operates as a series of separate but linked trading operations, where the separation is both (i) in time and (ii) by member state. The markets in most member states are composed of five trading periods (i) forward and futures market, (ii) day ahead market, (iii) intra-day market (trading on the day of delivery) (iv) balancing market and (v) imbalance settlement. The mechanisms associated with each of these timescales are outlined and illustrated in the diagram below.



Electricity within the EU (renewable or otherwise) is traded via a series of national markets, with almost each member state having its own market. Despite this highly segmented structure most markets follow the same topology and schedule. To give an understanding as to how electricity is traded across the EU this Annex gives a general outline of the market structure and the various segments within the market leading to a market that transfers electricity from generator to consumer.

The initial market is composed of a financial forward market, bringing together buyers and sellers to conclude trades for agreed volumes of electricity. The market operates from 2 to 3 years ahead of the delivery day up to the day-ahead of

the day of delivery. The trades are typically undertaken using standardised contract terms via a recognised exchange trading or bilaterally on an over-the-counter²¹³⁴ basis with no requirement to use standardised terms (although trades tend to be via pre-agreed terms).²¹³⁵

The trades in this initial ‘forward and future markets’, can be between different market areas or zones or within a market zone, with such trades simply specifying the delivery location, volume and price. The associated transmission capacity is usually traded in parallel to the electricity as a commodity. The auctioning of cross-border transmission capacity in Central Western Europe is organised by the Joint Allocation Office²¹³⁶ within the terms of the Joint Capacity Allocation Regulation²¹³⁷ which ensures non-discriminatory allocation of cross-border transmission capacity.

A special case of the forwards and futures market is the day-ahead market, where trades are undertaken one day before actual delivery. This market is highly important as at the end of the market’s trading window each period and each transmission zone where delivery is going to occur must have a balance between forecast generation and demand (i.e. generation facilities scheduled to operate and deliver electricity to the market must equal forecasted demand, net of imports and exports to other markets).

Most member states require the day ahead market to trade both electricity as a commodity and applicable transmission capacity jointly (a so called ‘stapled trade’ with the two elements together).

At the end of the day-ahead market (gate closure)²¹³⁸ traders effectively have a change of status, from purely financial bodies seeking to manage revenues from generation sales and purchasers of supply for their end customers, to a body

²¹³⁴ Over-the-counter (OTC) or off-exchange trading - A deal that is a customised derivative contract, usually arranged with an intermediary such as a major bank or the trading wing of an energy major, as opposed to a standardised derivative contract traded on an exchange. – Price Waterhouse Coopers, ‘Glossary of terms used in the trading of oil and gas, utilities and mining commodities’

²¹³⁵ Hans-Martin Koopmann and René Vanhaesendonck, ‘Standard Agreements in European Energy Trade’ in Martha Roggenkamp, Catherine Redgwell, Anita Ronne, and Inigo del Guayo (eds) *Energy Law in Europe National, EU and International Regulation* (Oxford University Press, 2016)

²¹³⁶ The JAO is a joint service company of twenty transmission system operators (TSOs) from seventeen countries (The TSOs involved in the initiative are Germany’s TenneT, 50Hertz, Amprion, and TransnetBW, Greece’s Admie, Austria’s APG, Czech CEPS, Luxembourg’s CREOS, Slovenia’s ELES, Belgium’s ELIA, Denmark’s EnerginetDK, Croatia’s HOPS, Hungary’s MAVIR, Poland’s PSE, France’s RTE, Slovakia’s SEPS, Norway’s Statnett, Swissgrid, Dutch TenneT, and Italy’s Terna) - See more at: <https://seenews.com/news/casceu-caio-to-launch-joint-allocation-office-for-cross-border-electricity-trading-482444#sthash.eQf9HJyG.dpuf>

²¹³⁷ EU Regulation 2016/1719 of 26 September 2016 ‘establishing a guideline on forward capacity allocation’ OJ L 259/42

²¹³⁸ Gate Closure is the deadline for the participation to a given market or mechanism by providing technical and price data regarding a generating facility to either the transmission system operator or market operator, as the case may be. For a particular market trading period usually within the balancing market. In the majority of cases this is 60 minutes ahead of ‘real-time’ operations – Mott Macdonald ‘Impact Assessment on European Electricity Balancing Market’ [2013] EC DG ENER/B2/524/2011

responsible for balancing the volume of electricity input to the grid and the electricity removed from the grid – a status known as a ‘balancing responsible party’ (BRP). At gate closure each BRP submits a balanced portfolio of generation and consumer demand to the transmission system operator (i.e. so-called ‘nominations’).

After the time of gate closure the transmission system operator will undertake to dispatch²¹³⁹ the generation to meet demand.

The day of delivery (the intra-day market) allows the fine tuning of traded positions due to better weather forecasts giving a better view of the renewable electricity facility’s output, unexpected power plant outages and other changes to their portfolio. The trading in the intra-day market of most EU member states is based on standard exchange-based terms.

At the time of physical delivery any generator or supplier (individual BRP) might face an imbalance in the amount of electricity available due to a failure of a generation facility within their portfolio or a consumer to whom they supply electricity increasing demand unpredictably. Thus, imbalance is the net difference between the BRP’s total generation inflow to the market and its demand supplied (outflow). The BRP pays a ‘cash out price’ for the imbalances to a settlement function. The whole process is known as ‘imbalance settlement’.

The transmission system operator maintains the system balance by managing the dispatch of generation to meet demand. With the management of generation dispatch considering instantaneous demand fluctuations, transmission constraints (discussed in Section A3.5 below) and the actual output of generating facilities operating this is a highly technical operation. As renewable generation is accorded ‘priority dispatch’ the fluctuation in renewable generation output due to the intermittency of wind and sun also add to the transmission system operator’s system balancing tasks.²¹⁴⁰ With imbalance settlement complete the total cost of electricity supplied to the end consumer can be calculated. Thus, depending on the abilities of the supplier to purchase electricity via the traded markets and forecast demand this will dictate if a profit is made on the sale.

As has been outlined, with wind and sun unpredictable in nature the derogation from imbalance settlement is particularly important for renewable electricity generation. Therefore, any potential for changes to this regulatory process are an area of considerable concern for renewable electricity facility owners, a fact brought out by the empirical research findings (Section 4.5 Theme 1.3).

²¹³⁹ A dispatch instruction is an instruction given by the transmissions system operator to a generation facility to produce a certain level of generated output. Such instructions are usually consistent with the volume and price nominations submitted at gate closure

²¹⁴⁰ Peter Cameron, ‘The Internal Energy Market – Redefining Objectives’ Peter Cameron and Raphael Heffron (eds) *Legal Aspects of EU Energy Regulation* (Oxford University Press, 2016), 25

A3.5 Transmission System Operator – Duties & Obligations

Since the separation of functions within the electricity market across the EU because of the First²¹⁴¹ and Second²¹⁴² Energy Packages into generation, transmission and supply, the role of the transmission system operator has been as owner and operator of the transmission system, which is usually undertaken for the whole of a member state (in Germany, however, the function is undertaken regionally). This has meant that the transmission system operator would develop and maintain the transmission system and, in most instances, operate the electricity market, as well as dispatching generation facilities to meet demand.²¹⁴³

However, since the implementation of the Transmission System Operation Regulation²¹⁴⁴ in 2017 the obligations around ownership (development of the assets, maintenance and charging for the transport of electricity across the network) and operation of the transmission system have been split. The system operator role therefore is responsible for the operational security of the network, dispatching of generating facilities (merit order dispatch), managing network constraints via dispatch curtailment,²¹⁴⁵ operational reserve²¹⁴⁶ and other ancillary services.

A3.6 Merit Order Dispatch

Merit order dispatch has been a core principle of electricity markets almost from their foundation at the start of the twentieth century.²¹⁴⁷ Merit order dispatch is a system in which generating facilities with the lowest short-run marginal costs are used first

²¹⁴¹ Council Directives 96/92/EC concerning common rules for the internal market in electricity and 98/30/EC on common rules for the internal market in natural gas

²¹⁴² http://ec.europa.eu/competition/sectors/energy/overview_en.html

²¹⁴³ Articles 2 and 12 of Directive (2009/72/EC), 'concerning common rules for the internal market in electricity' (the Electricity Markets Directive)

²¹⁴⁴ EU Regulation (2017/1485) of 2 August 2017 'establishing a guideline on electricity transmission system operation' (Network Code on System Operation)

²¹⁴⁵ Curtailment is a forced reduction in the output of an electricity generation facility from what it could otherwise produce given available resources, typically as a result of capacity constraints in the transmission system - Lori Bird, Jaquelin Cochran, and Xi Wang, 'Wind and Solar Energy Curtailment: Experience and Practices in the United States' [2014] National Renewable Energy Laboratory Working Paper; See Also Henrik Klinge Jacobsen and Sascha Thorsten Schröder, 'Curtailment of renewable generation: Economic optimality and incentives' (2012) 49 Energy Policy, 663

²¹⁴⁶ In order to ensure that the flow of electricity is maintained the transmissions system operator will ensure that a certain quantity of generating plant is kept in reserve such that it can be brought into operation and dispatch electricity to the transmission system quickly. The transmission system operator will organise this reserve into different categories dependent upon the time within which the facility can be dispatched. Such categories are usually called (i) primary reserve; which would be operational almost immediately and (ii) secondary reserve which would become operational in a few minutes if needed. Further information on operational reserve can be obtained from <https://www.nationalgrid.com/sites/default/files/documents/STOR%20v1.1.pdf> accessed 24 September 2018; See Also Eirik Amundsen and Lars Bergmancle, 'Provision of Operating Reserve Capacity: Principles and Practices on the Nordic Electricity Market, (2007) 2(1) Competition and Regulation in Network Industries

²¹⁴⁷ Monopolies and Mergers Commission, 'Central Electricity Generating Board: A Report on the Operation by the Board of its System for the Generation and Supply of Electricity in Bulk' (1981) HC 315, HMSO

to meet demand and more costly plants are only used as demand increases and exceeds operating (dispatched) generating capacity.

This means that periods with lower electricity demand should have a lower cost than periods with a higher demand, e.g. night is cheaper than day and summer is cheaper than winter. Renewable electricity facilities currently hold a derogation from participation in these mechanisms and the generated output is seen by merit order dispatch mechanisms as negative demand. In other words, renewable generating facilities simply generate when wind or solar resources are sufficient to so allow, and the output is incorporated within the market as a demand reducing mechanism. This can make the forecasting of demand, and thus generation capacity to be dispatched to meet this demand, less predictable. The derogation from priority dispatch mechanisms, as it relates to renewable electricity, is in diagonal conflict with the market segmentation prohibition of the state aid provisions of the Treaty (Article 107 TFEU & set out in Section 2.10.7).

The market mechanism composed of the traded markets outlined above, leading to the day ahead and balancing market still employ the principles of the merit order system. The principle is used by the transmission system operators when they seek to balance system flows and optimise the flows on the network within the dispatch timescale after 'gate closure'.²¹⁴⁸

Various economic processes are used to determine the merit order in the electricity markets across the EU, these processes are outside the scope of this research.²¹⁴⁹

A3.7 Transmission Constraints - Curtailment

Much of the electricity market is undertaken based on a deemed transmission system of infinite capacity. However, this is not the case and constraints or bottlenecks in the system need to be considered by the transmission system operator in managing actual flows.

²¹⁴⁸ Gate Closure is the deadline for the participation to a given market or mechanism by providing technical and price data regarding a generating facility to either the transmission system operator or market operator, as the case may be. For a particular market trading period usually within the balancing market. In the majority of cases this is 60 minutes ahead of 'real-time' operations – Mott Macdonald 'Impact Assessment on European Electricity Balancing Market' [2013] EC DG ENER/B2/524/2011

²¹⁴⁹ For an introduction to the economic principles of merit order dispatch see Arthus Mazer *Electric Power Planning for Regulated and Deregulated Markets* (Wiley, 2006); Alexander Eydeland and Krzysztof Wolyniec *Energy and Power Risk Management: New Developments in Modeling, Pricing, and Hedging* (Wiley, 2002)

These constraints mean that certain generating facilities will have to be shut down or have their output pegged back (have their operation ‘curtailed’)²¹⁵⁰ and other facilities dispatched to manage the flows across the network. This is undertaken via a process known as active network management (ANM), which is the control of electricity generation, voltage and frequency within the network using remote control and communication technologies.²¹⁵¹

When generating facilities have their operation curtailed in most European electricity markets they will receive compensation equal to the price bid by the generator to be shut down or curtailed. The amount of money paid to generators in curtailment costs is a highly sensitive issue within most member states and transmission system operators are usually incentivised to reduce these costs.²¹⁵²

Historically renewable electricity facilities have been given priority dispatch, meaning that they are dispatched first and thus any curtailment is managed by the dispatch of coal and gas fuelled generation. This practice was put in place to maximise the output of carbon emissions free renewable facilities (part of the overriding objective²¹⁵³ principle for renewables). The practice was also employed such that renewable electricity facilities would not be penalised for transmission network capacity inadequacies, as well as to protect them from possible anti-competitive behaviour of imperfectly unbundled vertically integrated utilities.²¹⁵⁴ However, where renewable generation is curtailed it has received compensation at the price contained in its feed-in tariff, which is usually considerably above the wholesale market price for electricity.

The issue of priority dispatch and curtailment cost reforms for renewable generation is set out in Section A3.8.

²¹⁵⁰ Curtailment is a reduction in the output of a generator from what it could otherwise produce given available resources, typically on an involuntary basis. Curtailment of generation has been a normal occurrence since the beginning of the electricity industry - <https://www.nrel.gov/docs/fy14osti/60983.pdf> accessed 22 September 2018

²¹⁵¹ CIGRE Working Group C6.11, 2011. Development and Operation of Active Distribution Networks CIGRE

²¹⁵² Hans Schermeyer, Claudio Vergara and Wolf Fichtner, ‘Renewable energy curtailment: A case study on today’s and tomorrow’s congestion management’ (2018) 112 Energy Policy, 427; Michael Joos and Iain Staffell, ‘Short-term integration costs of variable renewable energy: Wind curtailment and balancing in Britain and Germany’ (2018) 86 Renewable and Sustainable Energy Reviews, 45; Jing Hu, Robert Harmsen, Wina Crijns-Graus, Ernst Worrell and Machteld van den Broek, ‘Identifying barriers to large-scale integration of variable renewable electricity into the electricity market: A literature review of market design’ (2018) 81 Renewable and Sustainable Energy Reviews, 2181; Laura Kane and Graham Ault, ‘A review and analysis of renewable energy curtailment schemes and Principles of Access: Transitioning towards business as usual’ (2014) 72 Energy Policy, 67

²¹⁵³ ‘overriding objective of environmental protection’ from C-524/07 *Commission v Austria* ECLI:EU:C:2008:717, para 57 or ‘overriding requirement of environmental protection’ from Case C-573/12, *Ålands Vindkraft AB v Energimyndigheten* ECLI:EU:C:2014:2037, para 76 and 80 - Case C-164/17 *Edel Grace and Peter Sweetman v An Bord Pleanála* ECLI:EU:C:2018:593, para 55 – projects may be undertaken for imperative reasons of overriding public interest, including those of a social or economic nature

²¹⁵⁴ EU Commission SWD(2013) 439 ‘Delivering the internal market in electricity and making the most of public intervention’ available at https://ec.europa.eu/energy/sites/ener/files/documents/com_2013_public_intervention_swd04_en.pdf accessed 12 September 2017

A3.8 Renewable Generation & Priority Dispatch

For renewables the ability to predict generated output is limited due to its reliance on the availability of wind and solar resources, hence renewable electricity generation has hitherto been exempted (derogation) from merit order dispatch and imbalance settlement to facilitate the development of this type of generation capacity, rather than ‘punish’ it for issues that are out with its control.²¹⁵⁵ Priority dispatch for renewable electricity was introduced, at the EU level, within the first Renewable Energy Directive²¹⁵⁶ in 2001 and was further refined in Article 16(2)(c) of the 2009 Renewable Energy Directive²¹⁵⁷ (See Section 2.10.7). Member states are required to minimise the curtailment of electricity produced from renewable sources.²¹⁵⁸ Thus priority dispatch is a policy and legal choice driven by EU law.

The continuation of these derogations is now being questioned across the EU.²¹⁵⁹

The potential removal of priority dispatch by reform to market mechanisms, initiated at both EU and member state level is an issue seen to be a significant regulatory risk by the Developer Operator respondents to the empirical phase of the research set out in Section 4.5 – Theme 1.3.

A3.9 Embedded Benefits

The final feature of the electricity market set out in this chapter is what is known as embedded benefits. This is an issue of high significance for renewable electricity facilities as they derive revenue from a share in the reduced costs imposed on the electricity network. Thus, during the empirical research, any change to the mechanisms surrounding the sharing of embedded benefits was seen by the developer operators to be a regulatory risk, whereas the regulator respondent saw the termination of the practice as simply restoring the equitable balance of cost-sharing across the industry.

²¹⁵⁵ Reinier van der Veen, Rudi Hakvoort, ‘The electricity balancing market: Exploring the design challenge’ (2016) 43(B) Utilities Policy 186

²¹⁵⁶ EU Directive (2001/77/EC) 27 September 2001 ‘The promotion of electricity produced from renewable energy sources in the internal electricity market’ OJ L 283/33

²¹⁵⁷ Council Directive 2009/28/EC 23 April 2009 Promotion of the use of energy from renewable sources OJ L140/16 (Renewable Energy Directive) available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN> – ‘Member States shall ensure that when dispatching electricity generating installations, transmission system operators shall give priority to generating installations using renewable energy sources in so far as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria.’

²¹⁵⁸ Article 16(2)(c)(7) of 2009 Renewable Energy Directive (2009/28/EC)

²¹⁵⁹ Michael Joss and Iain Staffell ‘Short-term integration costs of variable renewable energy: Wind curtailment and balancing in Britain and Germany’ (2018) 86 Renewable and Sustainable Energy Reviews 45; See Also Hans Schermeyer, Claudio Vergara and Wolf Fichtner, ‘Renewable energy curtailment: A case study on today’s and tomorrow’s congestion management’ (2018) 112 Energy Policy 427

Generating facilities (renewable and other forms) connected to the distribution network (called 'embedded generation') do not pay charges related to the transmission network as the output from such facilities is deemed to be used within the distribution network to which the embedded generation is connected. The output is considered to reduce the net electricity flows across the transmission network (the 'net power flows principle').

As transmission charges are related to the amount of electricity on the transmission network, any supplier which sells electricity to consumers within the same distribution network as it has purchased the output of the embedded generation, pays lower charges – it is billed 'net' of the generated output. The portion of the saving passed on to the embedded generator depends on the terms of the power purchase agreement between the generator and the supplier.

The net power flows principle also leads to a series of indirect benefits to the embedded generator. There are several other charges that are calculated based on the supplier's 'net' electricity flows. These include transmission losses,²¹⁶⁰ balancing charges²¹⁶¹ and charges related to credit requirements. Again, the proportion of the savings passed on to the embedded generator depends on the power purchase agreement.

Separately, embedded generators allow electricity consumers to avoid so-called transmission network charges²¹⁶² – with the proportion passed on to the embedded generator depending on the power purchase agreement.

The share of embedded benefits received by renewable electricity facilities connected to the distribution system is regarded by the owners and operators of the facilities during the empirical research (See Section 4.5 Theme 1.3) as a welcome source of additional revenue. The practice was reviewed by the CJEU in the *Essent* ²²¹⁶³case (See Section 3.5.13), where it was found that the declaring and sharing of embedded benefits should be prohibited as it was allowing certain market participants to receive a benefit not open to others and thus discriminatory. The practice can thus be considered a diagonal conflict with the anti-state aid (Article 107 TFEU) provisions of the Treaty.

²¹⁶⁰ Transmission losses occur when electricity is transported across the transmission network. Therefore reducing the flows across the transmission network reduces these losses and thus the cost savings can be shared with embedded generation facilities.

²¹⁶¹ Balancing Costs is the cost imposed on generators and suppliers as a result of a miss-match between the amount of electricity forecast to be made available at the time of physical delivery or the demand to be placed on the transmission system.

²¹⁶² Transmission network charges are the largest of the embedded benefits as net flows reduce the electricity flows on the transmission system, hence as a result of the embedded generation the savings can be shared with the facility's owners

²¹⁶³ Case C-492/14 *Essent Belgium NV v Vlaams Gewest and Others* ECLI:EU:C:2016:732

Developer operators, however, saw this as another example of regulatory risk which required careful management.

A3.10 Nodal Pricing

The electricity market model outlined above, in the most part, assumes that each member state will have its own electricity market and the market will cover all generating facilities and demand points in the member state. A single market price is derived and used in the financial settlement of the flows of electricity. Issues such as transmission constraints and curtailment are managed as a separate process within the imbalance settlement mechanism.

Nodal pricing²¹⁶⁴ would take each point where a generation facility or a demand source was connected to the network as a separate point at which to derive a price for electricity.²¹⁶⁵ Thus instead of one price for the whole market or member state, there would be a multiplicity of prices.²¹⁶⁶ The use of nodal pricing makes dealing with transmission constraints and curtailment easier and more transparent,²¹⁶⁷ as the price paid to generating facilities curtailed is the price at that point in the electricity network (or node).²¹⁶⁸ Also where electricity is being sent a considerable distance from a generating facility to a demand point, the costs of the transmission network flows can be calculated using a similar nodal method.²¹⁶⁹

Considerations such as 'marginal nodal pricing' or 'pricing as bid',²¹⁷⁰ as well as the various pricing algorithms to derive a nodal price are outside the scope of this research.²¹⁷¹

²¹⁶⁴ The technical implementation of nodal pricing is outside the scope of this research however, an introduction to the subject can be obtained from Martin Weibelzahl, 'Nodal, zonal, or uniform electricity pricing: how to deal with network congestion' (2017) 11(2) *Frontiers in Energy* 210

²¹⁶⁵ Richard Green, 'Nodal pricing of electricity: how much does it cost to get it wrong?' (2007) 31 *Journal of Regulatory Economics* 125

²¹⁶⁶ Fred Schweppe, Michael Caramanis, Richard Tabors and Roger Bohn *Spot Pricing of Electricity* (Springer, 1988)

²¹⁶⁷ Roger Bohn, Michael Caramanis and Fred Schweppe, 'Optimal pricing in electrical networks over space and time' (1984) 15(3) *Rand Journal of Economics* 360; Martin Weibelzahl, 'Nodal, zonal, or uniform electricity pricing: how to deal with network congestion' (2017) 11(2) *Frontiers in Energy* 220

²¹⁶⁸ Endre Bjørndal, Mette Bjørndal and Victoria Gribkovskaia, 'A Nodal Pricing Model for the Nordic Electricity Market' [2014] Norwegian School of Economics Working Paper

²¹⁶⁹ R Kovacs and A Leverett, 'A load flow based method for calculating embedded, incremental and marginal cost of transmission capacity' (1994) 9(1) *IEEE Transactions on Power Systems*

²¹⁷⁰ Marginal nodal pricing is where all accepted offers in the same node are paid the same nodal price. The nodal price is determined by the node's marginal offer. In a pay-as-bid nodal pricing model, all accepted offers are paid according to their offer price - Pär Holmberg and Ewa Lazarczyk, 'Congestion management in electricity networks: Nodal, zonal and discriminatory pricing' [2012] Electricity Policy Research Group- Working Paper 1209

²¹⁷¹ Karsten Neuhoff and Rodney Boyd 'Technical Aspects of Nodal Pricing' [2011] Climate Policy Initiative Working Paper

A3.11 Conclusion

The structure and main features of the electricity market relating to renewable electricity set out in this chapter show that the market does not simply operate in the moment but is a process that starts several years before, with traded markets seeing market operators undertaking initial trading activity some three to four years before the actual dispatch of the asset.²¹⁷²

Additionally, the advantages of priority dispatch and embedded benefits enjoyed by renewable electricity are themes which will be returned to during the empirical phase of this research. These practices must also be understood as they are seen to be in diagonal conflict with various aspects of the requirements of Article 107 TFEU prohibiting state aid (See Section 2.10.7 and 3.5.13).

²¹⁷² <https://business.nasdaq.com/trade/commodities/products/power-derivatives/UK-power.html>

Annex 4 - Service of General Economic Interest & State Aid

There are areas which the TFEU has defined as allowable state aid. These are set out in Article 107(2) TFEU as - aid having a social character, granted to individual consumers (granted without discrimination related to the origin of products); aid following natural disasters; aid granted following reunification of Germany. Additionally, Article 107(3) TFEU, sets out activities which may be justified – promoting economic development of depressed areas; promoting the execution of an important project of common European interest; facilitating the development of certain economic activities relating to the common interest;²¹⁷³ promoting culture and heritage conservation; other categories of aid specified by the Council on a proposal from the Commission.

Therefore, payments which can be shown to be for a purpose of general economic interest can be regarded as allowable forms of aid – *Orange v Commission*.²¹⁷⁴ Services of general economic interest are economic activities that public authorities identify as being of particular importance to citizens and that would not be supplied (or would be supplied under different conditions) if there were no public intervention - examples being transport networks, postal services and social services.²¹⁷⁵

State aid control comes into play when these services are provided by a company and financed through public resources, in particular because overly generous compensation could enable the service providers to cross-subsidise their other commercial activities, and thereby distort competition.²¹⁷⁶ In *Wallon & Glaverbel v Commission*²¹⁷⁷ the court held that general economic interest, in accordance with Article 107(3)(b), would include areas of cross-EU co-operation in environmental protection or other projects:-

Common European interest is a scheme... that forms part of a transnational European programme supported jointly by a number of governments of the member states, or

²¹⁷³ State aid granted for objectives of the common interest is compatible with Article 107(3)(c) Case T-177/07 *Mediaset v Commission* ECLI:EU:T:2010:233 para 125

²¹⁷⁴ Case T-385/12, *Orange v Commission*, ECLI:EU:T:2015:117, para 43

²¹⁷⁵ EU Communication 2012/C 8/02, 'State aid rules to compensation granted for the provision of services of general economic interest' OJ C8/4; See Also EU Communication 'Services of General Interest In Europe' OJ 2001 C17 – this was confirmed in April 2018 via Case C-91/17 *Cellnex Telecom v Commission* ECLI:EU:C:2018:284 – where it was held that (i) state intervention is justified only when there is market failure, meaning that before a public service obligation (PSO) is imposed, the market failure must be demonstrated with objective evidence, (ii) A PSO must be clearly defined, (iii) one or more undertakings must be made responsible, by law or through contract, to supply the service, and (iv) the selection of the supplier(s) and well as their compensation must be determined according to the procedures laid down in the 2012 Services of General Economic Interest EU Framework

²¹⁷⁶ http://ec.europa.eu/competition/state_aid/overview/public_services_en.html

²¹⁷⁷ Case C-62/87 *Executif Regional Wallon & Glaverbel v Commission*, ECLI:EU:C:1988:132, para 22

arises from concerted action by a number of member states to combat a common threat such as environmental pollution.

Annex 5 - State Aid - General Block Exemption Regulation (GBER)²¹⁷⁸

State funding meeting the criteria in Article 107(1) TFEU constitutes state aid and requires notification to the Commission in accordance with Article 108(3) TFEU. However, according to Article 109 TFEU, the Council may determine categories of aid that are exempted from this notification requirement. In accordance with Article 108(4) TFEU the Commission may adopt regulations to this effect, these regulations being the General Block Exemption Regulation (GBER). With this regulation, the Commission can declare specific categories of state aid compatible with the Treaty if they fulfil certain conditions, thus exempting them from the requirement of prior notification and Commission approval. As reported in the June 2018 report on competition policy, more than 97% of all new aid measures are implemented based on the GBER.²¹⁷⁹

The GBER allows member states to provide aid up to a threshold (known as 'aid intensity')²¹⁸⁰ in a series of categories without the need to notify the Commission that the aid has been granted. The GBER frees categories of state aid from reporting requirements where the benefits of such aid are deemed to outweigh the possible distortions of competition in the single market triggered by the public funding.²¹⁸¹ The GBER empowers the Commission to declare, in accordance with Article 109 TFEU, that certain categories of aid may, under certain conditions, be exempted from the notification requirement, including aid in favour of environmental protection.²¹⁸²

The GBER contains provisions to help member states meet their EU 2020 climate targets,²¹⁸³ to gradually move to market based support for renewable energy,

²¹⁷⁸ EU Regulation No 1588/2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, OJ 2015 L 248/1, and European Commission, Regulation (EU) No651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. General Block Exemption Regulations for State aid ('GBER')

²¹⁷⁹ EU COM(2018) 482 final 18 June 2018 'Annual Report on Competition Policy 2017' - The Annual Report and the Staff Working Paper can be accessed at: http://ec.europa.eu/competition/publications/annual_report/index.html.

²¹⁸⁰ 'aid intensity' means the aid amount expressed as a percentage of the eligible costs – it is the means of calculating the maximum amount of state aid that can be granted to a particular organisation operating in a particular sector – The GBER specifies aid intensities for different sectors below which the notification of state aid is not required. available at http://ec.europa.eu/competition/state_aid/studies_reports/sme_handbook.pdf access 10 April 2018

²¹⁸¹ European Commission Memo 14/369 21 May 2014 'State aid: Commission adopts new General Block Exemption Regulation (GBER)' available at www.europa.eu/rapid/press-release_MEMO-14-369_en.doc accessed 10 April 2018

²¹⁸² Ibid

²¹⁸³ EU Regulation No 1588/2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid, OJ 2015 L 248/1, and European Commission, Regulation (EU) No651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ 2014 L 187/1. General Block Exemption Regulations for State aid ('GBER'), para 41

to incentivise companies to take early steps to meet EU standards,²¹⁸⁴ provide aid for up to 100% of the costs of remediating contaminated land,²¹⁸⁵ allow operating aid for the additional costs for production of renewable electricity²¹⁸⁶ and operating aid for small scale renewable energy installations.²¹⁸⁷ Also, aid in order to facilitate environmental studies,²¹⁸⁸ the rehabilitation of buildings,²¹⁸⁹ and waste recycling is included in the Regulation.²¹⁹⁰ A recent example of the application of the GBER is the finding of the Commission related to state aid support for the installation of solar panels on buildings in Germany.²¹⁹¹ In the Commission's reasoning for its approval the scheme demonstrates an almost text book set of approved criteria (i) contribution to a well-defined objective of general economic interest; (ii) need for State intervention, as the measure is targeted towards a situation where aid can bring about a material improvement that the market alone cannot deliver, remedying a well-defined market failure; (iii) appropriateness of the aid measure, addressing an objective of common interest²¹⁹² of the EU – increasing the deployment of renewable facilities; (iv) incentive effect, the aid changes the behaviour of the entity concerned in such a way that it engages in additional activity which it would not be carried out without the aid; (v) proportionality of the aid, the aid amount is limited to the minimum needed to incentivise the investment; (vi) avoidance of undue negative effects on competition – the incentive was focussed very much on the consumption of the output from the solar facilities within the building on which they were mounted and (vii) transparency.²¹⁹³

Additionally, on 18 May 2018 the Commission made proposals to amend the GBER to make it easier to ascribe aid given to projects enhancing energy networks, combatting pollution and climate change as compatible with the internal market²¹⁹⁴ (as well as other objectives outside the scope of this research).²¹⁹⁵ These proposals

²¹⁸⁴ Ibid, para 36(1)

²¹⁸⁵ Ibid, para 45

²¹⁸⁶ Ibid, para 42

²¹⁸⁷ Ibid, para 43

²¹⁸⁸ Ibid, para 49

²¹⁸⁹ Ibid, para 39

²¹⁹⁰ Ibid, para 47

²¹⁹¹ Commission Decision SA 48327 - February 2018, available at

http://ec.europa.eu/competition/elojade/iseif/case_details.cfm?proc_code=3_SA_48327 accessed 19 June 2018

²¹⁹² State aid granted for objectives of the common interest is compatible with Article 107(3)(c) Case T-177/07

Mediaset v Commission ECLI:EU:T:2010:233 para 125

²¹⁹³ Eduardo Cadette, 'European Commission approves State aid scheme for solar panels in rented residential buildings in Germany' May 2018 Morais Leitão, Galvão Teles, Soares da Silva & Associados Newsletter available at

https://www.mlgts.pt/xms/files/Publicacoes/Newsletters_Boletins/2018/Newsletter_Europeu_e_Concendencia_28_EN.PDF accessed 19 June 2018

²¹⁹⁴ Internal Market is an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured - Case T-356/15 *Austria v Commission* ECLI:EU:T:2018:439, para 516

²¹⁹⁵ EU COM(2018) 398/2 2018/0222 'amending Council Regulation (EU) 2015/1588 of 13 July 2015 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to certain categories of horizontal State aid'

were made in recognition of the need to align centrally managed EU funds and funds from member states in the development of assets compatible with the stated priority areas. This alignment will make it easier to develop much needed electricity networks to enhance interconnectivity.²¹⁹⁶ This is an issue set out in the empirical research phase and in the recommendations for regulatory reform in Chapter 6.

²¹⁹⁶ Ibid, explanatory memorandum

Annex 6 - 2014 Guidelines on State Aid for Environmental Protection & Energy²¹⁹⁷

Due to the feed-in tariff payments made to renewable energy generating facilities or the granting of green certificate that can be traded to recover additional revenue, there is potential for market distortion – examples of such cases being *Vent De Colère*,²¹⁹⁸ *Austrian Green Levy*²¹⁹⁹ and *German Green Levy*²²⁰⁰ (see Sections 3.5.10 to 3.5.12). As outlined above, the European Commission published Guidelines²²⁰¹ on public support for projects in the field of environmental protection and renewable energy on 9 April 2014. These 2014 Guidelines allow the payment of operating aid to renewable generating facilities to cover the difference between production costs and wholesale market prices.²²⁰² The 2014 Guidelines outline that state aid is allowed ‘*which does not adversely affect trading conditions to an extent contrary to the common interest*’.²²⁰³ The 2014 Guidelines were challenged in two annulment cases, both of which were dismissed.²²⁰⁴

The 2014 Guidelines are stated to provide guidance on how member states can reach their 2020 renewable energy and climate targets, while addressing the market distortions that may result from subsidies granted to renewable energy sources. To this end, the Guidelines promote a transition to market-based support for renewable energy.²²⁰⁵ They also provide criteria on how member states can relieve energy intensive companies that are particularly exposed to international competition from charges levied for the support of renewables.²²⁰⁶ Furthermore, the 2014 Guidelines include new provisions on aid to energy infrastructure and generation capacity to strengthen the internal energy market and ensure security of supply.²²⁰⁷ The 2014 Guidelines have brought about the need for economic and financial analysis in assessing the appropriateness of any state aid in the energy

²¹⁹⁷ European Commission Communication ‘Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01.

²¹⁹⁸ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l’Écologie, du Développement durable, des Transports et du Logement, Ministre de l’Économie, des Finances et de l’Industrie*, ECLI, 2013

²¹⁹⁹ Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060

²²⁰⁰ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281

²²⁰¹ European Commission Communication ‘Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01

²²⁰² *Ibid*, Article 3(23) provided the assessment criteria in Article 3(1) are satisfied

²²⁰³ *Ibid*, Article 2

²²⁰⁴ Case T-694/14 *European Renewable Energies Federation v Commission* ECLI:EU:T:2015:915 and Case T-670/14 *Milchindustrie-Verband v Commission* ECLI:EU:T:2015 :906

²²⁰⁵ European Commission Communication ‘Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 50 and 51; See also Pablo Del Rio and Pere Mir-Artigues, ‘Combinations of Support Instruments for Renewable Electricity in Europe: A Review’ (2014) 40 *Renewable and Sustainable Energy Reviews*, 287, 293; E Szyszczak, ‘Time for Renewables to Join the Market: the New Guidelines on state aid for Environmental Protection and Energy’ (2014) 5(9) *Journal of European Competition Law and Practice*, 616 and 622.

²²⁰⁶ *Ibid*, Section 3(7), Articles 167-172

²²⁰⁷ *Ibid*, Section 3(8)

sector. An example of this kind of analysis is the state aid investigation relating to the contract for difference (CfD),²²⁰⁸ for the conversion of RWE's Lynemouth power plant from coal to biomass.²²⁰⁹

In granting aid to renewable projects, the 2014 Guidelines establish seven criteria that must be satisfied.

1 Contribution to an objective of common interest

The 2014 Guidelines state that the objective in relation to energy is to develop 'a competitive, sustainable and secure energy system in a well-functioning Union energy market',²²¹⁰ where member states have effectively defined the pursuit of renewable energy facilities and carbon emission reductions as the objectives of common interest²²¹¹ in line with the decisions of the Commission in this area.²²¹²

2 Need for State Intervention

The need for state intervention is considered accepted where a market failure exists (positive or negative), such as the failure to internalise the costs of carbon emissions, where the failure is not corrected by other elements of the renewables energy regulatory framework (such as the emission trading scheme).²²¹³ An example of such a market failure is the UK Contract for Difference for Renewables, where the Commission accepted the residual carbon externality, as the carbon price was not high enough to overcome the externality.²²¹⁴

²²⁰⁸ A contract for difference (CFD) is essentially a contract between two parties, whereby the parties exchange the difference between the market prices for electricity and the reference price in the CFD – in the context of renewables in the UK a CfD is a private law contract between a low carbon electricity generator and the Low Carbon Contracts Company (LCCC), a government-owned company – available at <https://www.gov.uk/government/collections/electricity-market-reform-contracts-for-difference> accessed 9 July 2018

²²⁰⁹ December 2015, the Commission approved the CfD as compatible aid; See European Commission, Decision of 10 April 2015 concerning State aid SA.38762 (2015/C) (2014/N)-United Kingdom, Investment Contract for Lynemouth Power Station Biomass Conversion, C/i 16/2015, 52

²²¹⁰ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 30

²²¹¹ State aid granted for objectives of the common interest is compatible with Article 107(3)(c) Case T-177/07 *Mediaset v Commission* ECLI:EU:T:2010:233 para 125

²²¹² for example European Commission, Decision of 23 July 2014 concerning Electricity Market Reform, Contract for Difference for Renewables in the United Kingdom, SA.36196, para 52-53; European Commission, Decision of 23 July 2014 concerning Support for five offshore wind farms: Walney, Dudgeon, Hornsea, Burbo Bank and Beatrice in the United Kingdom, SA.38758, SA.38759, SA.38761, SA.38763 & SA.388121, para 56-57; European Commission, Decision of 28 October 2014 concerning aid to household wind turbines and offshore wind turbines with an experimental aspect in Denmark, SA.37122, para 42

²²¹³ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 34-39

²²¹⁴ European Commission, Decision of 23 July 2014 concerning Electricity Market Reform, Contract for Difference for Renewables in the United Kingdom, SA.36196

3 Appropriateness of the Aid

In assessing the appropriateness of the aid, a two-step approach is set out (i) other policy instruments must be considered, such as regulation, market-based instruments or soft instruments like labelling and education campaigns²²¹⁵ and (ii) if aid is necessary, the aid mechanism implemented should be such that it generates the minimal distortions to trade or competition.²²¹⁶

4 Incentive Effect

The 2014 Guidelines state that the aid must incentivise *‘the beneficiary to change its behaviour to increase the level of environmental protection or to improve the functioning of a secure, affordable and sustainable energy market’*.²²¹⁷ Demonstrating the incentive effect is straight forward and uncontroversial in relation to renewable energies, whose generation costs tend to be higher than market prices.²²¹⁸

5 Proportionality of the Aid

There is a general presumption that any aid must be proportionate²²¹⁹ and as such limited to the amount required to achieve the defined objective.²²²⁰ When reviewing an individual case the reasonable rate of return (10% being considered applicable for electricity generation)²²²¹ will be considered as compared to the rates of return found for similar projects.²²²² It is generally accepted by the Commission²²²³ that the

²²¹⁵ European Commission Communication ‘Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 40-44

²²¹⁶ Ibid, Article 45-48

²²¹⁷ Ibid, Article 49

²²¹⁸ European Commission, Decision of 23 July 2014 concerning Electricity Market Reform, Contract for Difference for Renewables in the United Kingdom, SA.36196, para 60-62

²²¹⁹ Meaning that ‘measures should not exceed the limits of what is appropriate and necessary for attaining the objective pursued, and that where is a choice between several appropriate measures must be had to the least onerous’ Case T-419/03 *Altsoff Recycling Austria v Commission* ECLI:EU:T:2011:102, para 134; Also ‘proportionality’ or ‘being proportionate’ can be considered an ideal or a goal rather than being a principle with the same status as ‘polluter pays’ or the ‘precautionary’ principle. – see Jonathon Verschuuren, ‘Sustainable Development and the Nature of Environmental Legal Principles’ (2006) (1)9 *Potschefstroom Electricity Law Journal*, 17; See Also Jurian Langer and Wolf Sauter ‘The Consistency Requirement in EU Law’ (2017) 39 *Journal of European Law*

²²²⁰ European Commission Communication ‘Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 69

²²²¹ European Commission, Decision of 24 October 2014 concerning aid to photovoltaic installations and other renewable energy installations in Denmark, SA.36204 para 41; European Commission, Decision of 14 January 2013 concerning aid for all forms of biogas use in Denmark, SA.35485, para 36 – However, the Commission has gone as high as 12% (European Commission Decision of 28 October 2014 concerning support scheme for electricity produced from renewable sources and efficient cogeneration in Estonia, SA.36023, para 111) and as low as 6% (As part of the implementation of the German Support scheme, see also European Commission decisions: state aid SA.39723, SA.39724, SA.39725, SA.39726, SA.39731, SA.39732, SA.39733, SA.39735, SA.39738, SA.39739, SA.39741, SA.39742 (2014/N); SA.39722, SA.39727, SA.39728, SA.39729, SA.39730, SA.39734, SA.39736, SA.39740 (2015/NN) -Germany, Support to 20 large offshore wind farms under the EEG Act 2014, Brussels, 16.04.2015, C(2015)2580 final.

²²²² European Commission Communication ‘Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 84

²²²³ Commission Decision of 23 July 2014 concerning Support for five offshore wind farms: Walney, Dudgeon,

proportionate obligation and requirement to limit aid to the minimum required, are satisfied if any aid allocated follows an auction or competitive bidding processes.²²²⁴ From January 2016, renewable schemes were required to comply with the following (i) selling their electricity directly to the market, with the aid allocated being in the form of a premium to market prices; (ii) schemes are to be subject to standard network balancing responsibilities; and (iii) generators are to have no incentive to sell at negative prices.²²²⁵ Additionally, from 1 January 2017, competitive bidding has become compulsory, unless member states can demonstrate that eligibility is very limited, as this should provide the most competitive projects.²²²⁶ As has been stated above, these processes have resulted in the UK's Hornsea 3 Project bidding an auction price of 57.5 £/MWh during the 2017 CfD auction – a price comparable with thermal generation and the wholesale market – known as grid parity pricing.²²²⁷

6 Avoidance of Undue Negative Effects on Competition and Trade

This criterion requires that the negative effects of the aid on competition and the market must be outweighed by the effects of achieving the common interest objective,²²²⁸ being aware of locational effects²²²⁹ and the position of competitors.²²³⁰

7 Transparency

There is a requirement to be transparent by publishing the (i) full text of the aid scheme of the undertaking/individual aid, (ii) identity of the granting authority, (iii) identity of the beneficiaries, the form and amount of the aid, (iv) the date of granting, (v) the type of undertaking, (vi) the region where the beneficiary is located and (vii) the economic sector in which it is active.²²³¹

In addition to the above steps for the analysis of the compatibility of state aid with the requirements of Article 107 TFEU, the 2014 Guidelines sets out steps to assess the compatibility of aid granted to ensure electricity generation capacity is adequate, in general, via capacity mechanisms.²²³² For example, it is a key feature

Hornsea, Burbo Bank and Beatrice in the United Kingdom, SA.38758, SA38759, SA.38761, SA.38763 & SA.388121

²²²⁴ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 109

²²²⁵ Ibid, Article 124

²²²⁶ Ibid, Article 126

²²²⁷ Daniel Radov, Alon Carmel and Clemens Koenig, 'Offshore Revolution? Decoding the UK Offshore Wind Auctions & What the Results Means for a "Zero-Subsidy" Future' (2017) NERA Economic Consulting

²²²⁸ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Article 88 - State aid granted for objectives of the common interest is compatible with Article 107(3)(c) Case T-177/07 *Mediaset v Commission* ECLI:EU:T:2010:233 para 125

²²²⁹ Ibid, Article 89

²²³⁰ Ibid, Article 90

²²³¹ Ibid, article 104

²²³² Ibid, Article 219

of the UK electricity market to ensure sufficiency of generation capacity to meet peak demand.²²³³ The reserve margin²²³⁴ requirement, and therefore its effect on price as the margin decreases, has traditionally been expected to provide a stronger and earlier investment signal, thereby ensuring adequate electricity generation capacity and more stable electricity prices; however this is not always the case.²²³⁵ Once again, as has been stated with regards to renewables support schemes (*Vent De Colère*,²²³⁶ *Austrian Green Levy*²²³⁷ and *German Green Levy*²²³⁸ Sections 3.5.10 to 3.5.12), the design of the capacity mechanism is key to it not being declared state aid as the CJEU declared in the *Tempus Energy*²²³⁹ case.

It should be noted that the increase in network interconnection as transmission technology develops, may well remove the need for capacity mechanisms, as reserve capacity can be shared between member states more readily.²²⁴⁰

The 2014 Guidelines also allow, under certain restrictions, the reduction of exemption of intensive energy users from the obligation to pay 'green' levies or environmental taxes.²²⁴¹ (This being a key issue in the case relating to reductions in the amount of 'green levy' paid by intensive energy users – see *Vent De Colère*, *Austrian Green Levy*, and *German Green Levy*). It should be noted that in accordance with a 2018 Decision²²⁴² the Commission has declared reductions in levy charges for 'electro-intensive undertakings' are also allowable state aid.

Lastly, the 2014 Guidelines set out the details of the instances of aid, above which a notification must be sent to the Commission.²²⁴³ The three most important

²²³³ Pradyumna Bhagwat, Kaveri Lychettira, Jorn Richstein, Emile Chappin and Laurens De Vries, 'The effectiveness of capacity markets in the presence of a high portfolio share of renewable energy sources' (2017) 48 *Utilities Policy*, 76; See Also Nicole Robins and Tridevi Chakma, 'state aid in Energy under the Spotlight: The Implications of the Hinkley Point Decision' (2016) 2 *European state aid Quarterly*, 247, 257

²²³⁴ reserve margin or capacity margin is defined as 'the excess of installed generation capacity over demand'. The de-rated capacity margin is defined as 'the expected excess of available generation capacity over demand' - Socrates Mokkas and Karen Mayor, 'Electricity Capacity Assessment: Measuring and modelling the risk of supply shortfalls' (2011) Office of gas and electricity markets (Ofgem) <https://www.ofgem.gov.uk/ofgem-publications/40421/capacityassessmentconsultationdocument.pdf> accessed 29 April 2018

²²³⁵ Cynthia Bothwell and Benjamin Hobbs, 'Crediting wind and solar renewables in electricity capacity markets: the effects of alternative definitions upon market efficiency' (2017) *Energy Journal*, 38; The mechanism was challenged by two cases Case T-788/14 to 793/14 *MPF Holdings v Commission*, application lodged on 28 November 2014 (withdrawn on 28 February 2017) and Case T-793/14 *Tempus Energy and Tempus Energy Technology v Commission*, application lodged on 4 December 2014

²²³⁶ Case C-262/12, *Association Vent De Colère Fédération nationale v Ministre de l'Écologie, du Développement durable, des Transports et du Logement, Ministre de l'Économie, des Finances et de l'Industrie*, ECLI, 2013

²²³⁷ Case T-251/11 *Austria v Commission*, ECLI:EU:T:2014:1060

²²³⁸ Case T-47/15 *Germany v Commission* ECLI:EU:T:2016:281

²²³⁹ Case T-793/14 *Tempus Energy v Commission* ECLI:EU:T:2018:790

²²⁴⁰ EU COM (2015) 80 'A Framework for a Resilient Energy Union with a Forward-Looking Climate Change Policy'

²²⁴¹ European Commission Communication 'Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C OJ 200/01, Section 3(7), Article 167-172

²²⁴² Commission Decision of 28 March 2018 relating to the offshore-surcharge reduction for railway undertakings in Germany SA.50395; See also Commission Decision of 28 March 2018 relating to reductions in the offshore surcharge for electro-intensive undertakings and reductions on the CHP surcharge for electricity produced from waste gases in Germany SA.49416

²²⁴³ Guidelines on state aid for Environmental Protection and Energy 2014 – 2020, 2014/C 200/01, Article 2

notification criteria in relation to renewable energy are (i) investment aid which exceeds €15m, (ii) operating aid for renewable generating capacity above 250MW, and (iii) aid for energy infrastructure where the total amount of aid exceeds €50m.

Annex 7 – Thematic Analysis Coding Scheme

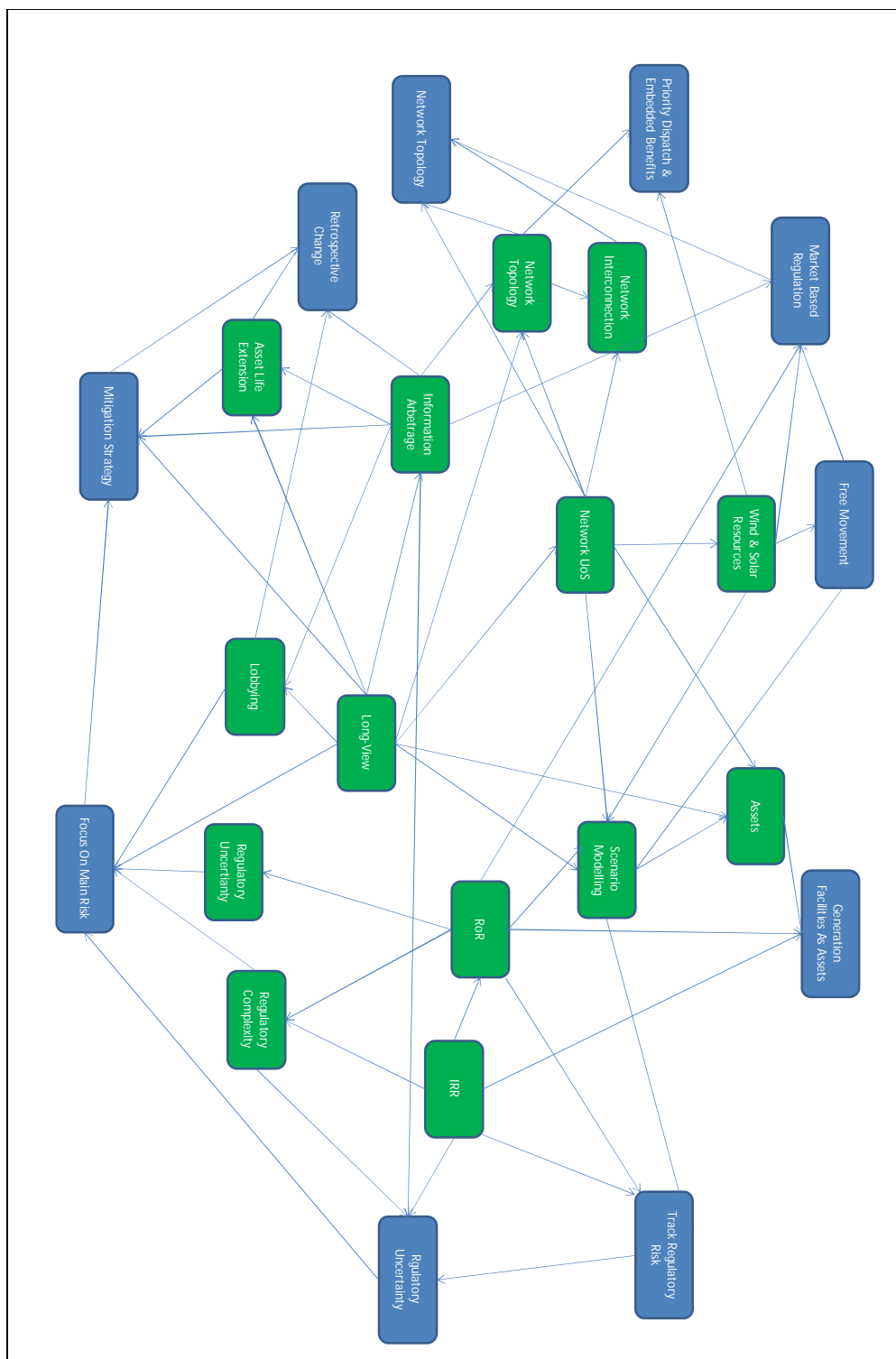
	Code Title	Code Definition
1	Asset Life Extension	The extension of the operational life of the generating facility beyond its original design life
2	Business Model	A financial forecast of the revenues and costs of a generating facility
3	Command and Control Regulation	That form of regulation where limits and targets are mandatory on those to whom the regulation is addressed
4	Information Arbitrage	The financial benefit to be gained by one player's more complete understanding of the market at any point in time from investment decision to closure
5	Internal Rate of Return	A discount rate that makes the net present value (NPV) of all cash flows from a project equal to zero
6	Lobbying	The declared use of a form of advocacy with the intention of influencing decisions made by the governments, regulators or industry groups
7	Long-term View	Is the period over which regulatory risk and scenario modelling are undertaken. The timescale relating to the asset life.
8	Market Based Regulation	That form of regulation where market mechanisms such as price discovery and trading are used to bring economic rigor to an outcome
9	Mitigation	The reduction of the effect or risk of an event via the putting in place of a contractual or operational process to reduce the effect of the risk
10	Network Interconnection	The level of connection between the electricity networks of two adjacent member states
11	Network Use of System (TNUoS)	The charges for the transport of electricity across the transmission or distribution network

12	Rate of Return	The annual income from an investment expressed as a proportion (usually a percentage) of the original investment
13	Regulatory Negotiation	The process of negotiating the regulatory framework with the EU, applicable governments and regulators
14	Regulatory Complexity	A state of the regulatory framework which shows a level of intricacy and interactivity such that the framework is multifaceted and acts at a series of governance levels
15	Regulatory Risk	The risk that the regulatory framework existing at the time the investment decision is made is substantially changed to the detriment of asset's cash flows during the operational life of the asset
16	Regulatory Uncertainty	The level of volatility that surrounds the regulatory framework such that the financial or operational outcome for the asset materially changes during the asset's operational life. Volatility being the speed and magnitude of change
17	Route to Market	Access to a regulated support mechanism for renewables or other forms of generating facility such as CfD or ROC
18	Scenario Modelling	A process by which a consistent picture of possible future regulatory frameworks is defined and used to analyse future business returns by considering alternative possible outcomes.
19	Socialisation of costs	A TNUoS tariff structure such that costs of constructing and operating the electricity network are spread across consumers
20	Topology	The layout of the electricity network
21	Wind and solar resource availability	The level of wind and solar energy at a location

Annex 8 - Thematic Map

Within the thematic map below the thematic codes appear in green and themes are set out in blue.

Within the thematic map below the thematic codes appear in green and themes are set out in blue.



Annex 9 - Data Saturation and Sample Size

The numerical method to determine sample size is derived from the paper by Ray Galvin, 'How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?' (2015) 1 Journal of Building Engineering.

A9.1 Derivation of the Probability Table

If a theme was held by proportion R of a population. If a member of this population is selected at random, the probability that he or she will have this belief is R . Now suppose a number n of such people are selected at random. For each of them, the probability that he or she has this belief will also be R .

If these n people are interviewed one by one in such a way that this theme, if person has it, will emerge, the probability of it emerging in the first interview is R , and the probability of it not emerging in this interview is $1-R$.

Should the theme not emerge, and a second person is interviewed. The probability that it does not emerge in this second interview is also $1-R$. Therefore, the probability that it will not have emerged after these first two interviews is

$$U_2 = (1-R)(1-R)$$

The probability that it does not emerge on the third interview is also $(1-R)$. Therefore, the probability of it not emerging after three interviews is

$$U_3 = (1-R)(1-R)(1-R)$$

Hence the probability of it not emerging after n interviews is

$$U_n = (1-R)^n$$

The probability that it does emerge in one or more interviews is therefore

$$P = 1-U_n$$

This can be written as

$$P = 1-(1-R)^n$$

A9.2 Number of Interviews is Sufficient

The above formula can be used to find the number of interviews required to have a stated level of confidence (P) that all the relevant themes which are held by proportion R of the population will occur within the interview sample

$$n = \frac{\ln(1 - P)}{\ln(1 - R)}$$

A9.3 Views and Interview Table

The table below shows the confidence that views (themes) will emerge during the interviews should they be held by a certain percentage of the population. For example, for 16 interviews there is 81.47% confidence that views will emerge only if they were held by less than 1 in 10 (10%) of the population. As some of the respondents were interviewed again to follow up on points raised by others, this means that 22 interviews were actually undertaken, giving broadly 90% confidence views will emerge only if they were held by less than 1 in 10 (10%) of the population.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
100%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
95%	95.00%	99.75%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
90%	90.00%	99.00%	99.90%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
85%	85.00%	97.75%	99.66%	99.95%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
80%	80.00%	96.00%	99.20%	99.84%	99.97%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
75%	75.00%	93.75%	98.44%	99.61%	99.90%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
70%	70.00%	91.00%	97.30%	99.19%	99.76%	99.93%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
65%	65.00%	87.75%	95.71%	98.50%	99.47%	99.82%	99.94%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
60%	60.00%	84.00%	93.60%	97.44%	98.98%	99.59%	99.84%	99.93%	99.97%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
55%	55.00%	79.75%	90.89%	95.90%	98.15%	99.17%	99.63%	99.83%	99.92%	99.97%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
50%	50.00%	75.00%	87.50%	93.75%	96.88%	98.44%	99.22%	99.61%	99.80%	99.90%	99.95%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
45%	45.00%	69.75%	83.36%	90.85%	94.97%	97.23%	98.48%	99.16%	99.54%	99.75%	99.86%	99.92%	99.96%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
40%	40.00%	64.00%	78.40%	87.04%	92.22%	95.33%	97.20%	98.32%	98.99%	99.40%	99.64%	99.78%	99.87%	99.92%	99.95%	99.97%	99.98%	99.99%	100.00%	100.00%	100.00%	100.00%
35%	35.00%	57.75%	72.54%	82.15%	88.40%	92.46%	95.10%	97.93%	98.65%	99.12%	99.43%	99.63%	99.76%	99.84%	99.90%	99.93%	99.96%	99.97%	99.98%	99.99%	99.99%	99.99%
30%	30.00%	51.00%	65.70%	75.99%	83.19%	88.24%	91.76%	94.24%	95.96%	97.18%	98.02%	98.62%	99.03%	99.32%	99.53%	99.67%	99.77%	99.84%	99.89%	99.92%	99.94%	99.96%
25%	25.00%	43.75%	57.81%	68.36%	76.27%	82.20%	86.65%	89.99%	92.49%	94.37%	95.78%	96.83%	97.62%	98.22%	98.66%	99.00%	99.25%	99.44%	99.58%	99.68%	99.76%	99.82%
20%	20.00%	36.00%	48.80%	59.04%	67.23%	73.79%	79.03%	83.22%	86.58%	89.26%	91.41%	93.13%	94.50%	95.60%	96.48%	97.19%	97.75%	98.20%	98.56%	98.85%	99.08%	99.26%
15%	15.00%	27.75%	38.59%	47.80%	55.63%	62.29%	67.94%	72.75%	76.84%	80.31%	83.27%	85.78%	87.91%	89.72%	91.26%	92.57%	93.69%	94.64%	95.44%	96.12%	96.71%	97.20%
14%	14.00%	26.04%	36.39%	45.30%	52.96%	59.54%	65.21%	70.08%	74.27%	77.87%	80.97%	83.63%	85.92%	87.89%	89.59%	91.05%	92.30%	93.38%	94.31%	95.10%	95.79%	96.38%
13%	13.00%	24.31%	34.15%	42.71%	50.16%	56.64%	62.27%	67.18%	71.45%	75.16%	78.39%	81.20%	83.64%	85.77%	87.62%	89.23%	90.63%	91.85%	92.91%	93.83%	94.63%	95.33%
12%	12.00%	22.56%	31.85%	40.03%	47.23%	53.56%	59.13%	64.04%	68.35%	72.15%	75.49%	78.43%	81.02%	83.30%	85.30%	87.07%	88.62%	89.98%	91.19%	92.24%	93.17%	93.99%
11%	11.00%	20.79%	29.50%	37.26%	44.16%	50.30%	55.77%	60.63%	64.96%	68.82%	72.25%	75.30%	78.02%	80.44%	82.59%	84.50%	86.21%	87.73%	89.08%	90.28%	91.35%	92.30%
10%	10.00%	19.00%	27.10%	34.39%	40.95%	46.86%	52.17%	56.95%	61.26%	65.13%	68.62%	71.76%	74.58%	77.12%	79.41%	81.47%	83.32%	84.99%	86.49%	87.84%	89.06%	90.15%
5%	5.00%	9.75%	14.26%	18.55%	22.62%	26.49%	30.17%	33.66%	36.98%	40.13%	43.12%	45.96%	48.67%	51.23%	53.67%	55.99%	58.19%	60.28%	62.26%	64.15%	65.94%	67.65%
0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%